


PRESENTED BY

Union University





Digitized by the Internet Archive
in 2014

ANNUAL CATALOGUE
OF
UNION UNIVERSITY

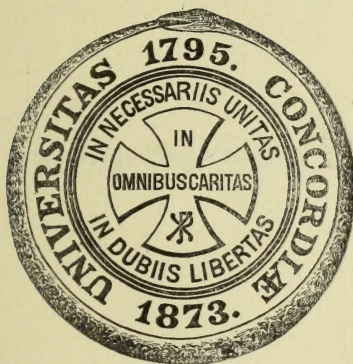


1899-1900

ONE HUNDRED AND FIFTH YEAR

Fort Orange Press
BRANDOW PRINTING COMPANY
ALBANY, N. Y.

ANNUAL CATALOGUE
OF
UNION UNIVERSITY



1899-1900

Fort Orange Press
BRANDOW PRINTING COMPANY
ALBANY, N. Y.

COLLEGE CALENDAR FOR 1900

	S	M	T	W	T	F	S		S	M	T	W	T	F	S
Jan.	..	1	2	3	4	5	6	July	1	2	3	4	5	6	7
	7	8	9	10	11	12	13		8	9	10	11	12	13	14
	14	15	16	17	18	19	20		15	16	17	18	19	20	21
	21	22	23	24	25	26	27		22	23	24	25	26	27	28
	28	29	30	31	..	..	..		29	30	31	..	..	..	..
Feb.	..	..	..	..	1	2	3	Aug.	..	..	..	1	2	3	4
	4	5	6	7	8	9	10		5	6	7	8	9	10	11
	11	12	13	14	15	16	17		12	13	14	15	16	17	18
	18	19	20	21	22	23	24		19	20	21	22	23	24	25
	25	26	27	28	..	..	..		26	27	28	29	30	31	..
Mar.	..	..	..	..	1	2	3	Sept.	..	..	..	..	..	..	1
	4	5	6	7	8	9	10		2	3	4	5	6	7	8
	11	12	13	14	15	16	17		9	10	11	12	13	14	15
	18	19	20	21	22	23	24		16	17	18	19	20	21	22
	25	26	27	28	29	30	31		23	24	25	26	27	28	29
	..	..	..	..	..	..	..		30	..	..	..	..	..	..
Apl.	1	2	3	4	5	6	7	Oct.	..	1	2	3	4	5	6
	8	9	10	11	12	13	14		7	8	9	10	11	12	13
	15	16	17	18	19	20	21		14	15	16	17	18	19	20
	22	23	24	25	26	27	28		21	22	23	24	25	26	27
	29	30	..	..	..	..	..		28	29	30	31	..	..	..
May	..	..	1	2	3	4	5	Nov.	..	..	..	..	1	2	3
	6	7	8	9	10	11	12		4	5	6	7	8	9	10
	13	14	15	16	17	18	19		11	12	13	14	15	16	17
	20	21	22	23	24	25	26		18	19	20	21	22	23	24
	27	28	29	30	31	..	..		25	26	27	28	29	30	..
Jun.	..	..	..	..	..	1	2	Dec.	..	..	..	..	..	..	1
	3	4	5	6	7	8	9		2	3	4	5	6	7	8
	10	11	12	13	14	15	16		9	10	11	12	13	14	15
	17	18	19	20	21	22	23		16	17	18	19	20	21	22
	24	25	26	27	28	29	30		23	24	25	26	27	28	29
	..	..	..	..	..	..	..		30	31	..	..	..	..	..

Figures in heavy type indicate days on which Union College is in session.

UNIVERSITY CALENDAR

1900

- 3 Jan. Winter term of Medical College resumes.
9 Jan. Winter term of Union College begins.
25 Jan. Day of Prayer for Colleges.
26 Jan. First semester of Law School ends.
28 Jan. Second semester of Law School begins.
21 Feb. Charter Day. Allison-Foote Prize Debate between
the Literary Societies.
22 Feb. Washington's Birthday.
3 March. Examination for conditioned students.
13 March. Commencement of the College of Pharmacy.
30 March. Winter term of Union College ends.
10 April. Spring term of Union College begins.
2 May. Commencement of the Medical College.
5 May. Selection of Junior and Sophomore prize orators.
29 May. Commencement of Law School.
30 May. Decoration Day.
1 June. Date for presentation of prize essays.
2 June. Examination for conditioned students.
24 June. Sunday. Baccalaureate Sermon, Union College.
25 June. Prize Contest in Extemporaneous Speaking, and
Prize Oratory of Juniors and Sophomores.
26 June. Meeting of Trustees, Phi Beta Kappa, Sigma Xi,
Alumni.
27 June. Commencement of Union College, the fourth Wed-
nesday in June. President's reception, Union
College.
28, 29 June. Entrance examinations.
18 Sept. Registration Day for Freshmen, Union College.
19 Sept. Registration Day for Students other than Fresh-
men, Union College. Entrance Examinations,
Union College.

University Calendar—*Continued***1900**

- 20 Sept. First Chapel Exercises and Recitations, Entrance
Examinations concluded.
- 21 Sept. Freshman Recitations begin.
- 22 Sept. Examination for conditioned students.
- 25 Sept. Winter term of Medical College begins.
- 1 Oct. The College of Pharmacy begins.
- 6 Nov. Election Day.
- 29 Nov. Thanksgiving Day. Recess five days.
- 8 Dec. Examination for conditioned students.
- 21 Dec. Fall term of Union College ends.

1901

- 2 Jan. Winter term of Medical College resumes.
- 8 Jan. Winter term of Union College begins.
- 24 Jan. Day of Prayer for Colleges.
- 21 Feb. Charter Day. Allison-Foote Prize Debate between
the Literary Societies.
- 22 Feb. Washington's Birthday.
- 2 March. Examination for conditioned students.
- 12 March. Commencement of the College of Pharmacy.
- 29 March. Winter term of Union College ends.
- 9 April. Spring term of Union College begins.
- 23 June. Sunday. Baccalaureate Sermon, Union College.
- 24 June. Prize Contest in Extemporaneous Speaking, and
Prize Oratory of Juniors and Sophomores.
- 25 June. Meeting of Trustees, Phi Beta Kappa, Sigma Xi,
Alumni.
- 26 June. Commencement of Union College, the fourth Wed-
nesday in June. President's reception, Union
College.
- 27, 28 June. Entrance Examinations, Union College.

UNION UNIVERSITY

Union University embraces the following institutions:

UNION COLLEGE.

ALBANY MEDICAL COLLEGE.

ALBANY LAW SCHOOL.

ALBANY COLLEGE OF PHARMACY.

DUDLEY OBSERVATORY.

Union College acquired by its charter granted in 1795, full University powers, but the creation of graduate institutions at Schenectady was not found practicable. Schools of Law and Medicine and also an Astronomical Observatory have long existed at Albany, only a few miles distant. The arrangement naturally suggested by these circumstances was, that the Professional Schools and the Observatory at Albany should be united with Union College, under the Charter and Board of Trustees of the latter. This was accordingly effected by the incorporation of Union University in 1873. The Albany College of Pharmacy was created by the Board of Governors, June 21, 1881, and incorporated as a Department of the University, August 21, of the same year.

The President of Union College and permanent Chancellor of Union University has the oversight of the University, each of the institutions having its resident Dean. The Dean of Union College acts in the place of the President in his absence, and also assists him in matters delegated to him by the President. The University Board of Governors is composed of permanent trustees of Union College, and of representatives of each of the other institutions embraced in Union University.

OFFICERS OF THE UNIVERSITY

President

ANDREW V. V. RAYMOND, D. D., LL. D.

Honorary Chancellor, 1899

HAMILTON W. MABIE, LL. D.

Governors

ANDREW V. V. RAYMOND, D. D., LL. D.,
HON. AMASA J. PARKER, A. M.,
HON. D. CADY HERRICK,
HON. WILLIAM L. LEARNED,
HON. SIMON W. ROSENDALE,
JOHN F. RATHBONE, Esq.,
SAMUEL B. WARD, M. D., PH. D.,
SILAS B. BROWNELL, LL. D.,
REV. WILLIAM IRVIN, D. D.,
HON. JUDSON S. LANDON, LL. D.,
HON. EDWARD W. PAIGE, LL. D.,
WILLIAM H. H. MOORE, A. M.,
REV. DENIS WORTMAN, D. D.,
HON. JOHN H. STARIN,
HON. JOHN A. DE REMER, A. M.,
CLARK BROOKS, A. M.,
REV. GEORGE ALEXANDER, D. D.

UNIVERSITY FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

HENRY WHITEHORNE, LL. D.,
Nott Professor (No. 1) of the Greek Language and Literature.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature, and Lecturer on
Current History.

MAURICE PERKINS, A. M., M. D.,
Nott Professor (No. 3) of Analytical Chemistry.

ALBERT VANDER VEER, M. D., PH. D.,
Dean of the Medical Faculty and Professor of Didactic, Abdomi-
nal and Clinical Surgery.

JOHN M. BIGELOW, M. D., PH. D.,
Professor of Diseases of the Throat and Nose.

HON. JUDSON S. LANDON, LL. D.,
Lecturer on Constitutional Law.

WILLIS G. TUCKER, PH. D., F. C. S.,
Registrar of the Medical College and Professor of Inorganic and
Analytical Chemistry and Toxicology.

WILLIAM HAILES, M. D.,
Anthony Professor of Pathological Anatomy, Embryology, His-
tology and Fractures and Dislocations.

SAMUEL B. WARD, M. D., PH. D.,
Professor of Theory and Practice of Medicine, and Hygiene.

JAMES P. BOYD, M. D.,
Professor of Obstetrics, Gynecology and Diseases of Children.

CYRUS S. MERRILL, M. D.,
Professor of Ophthalmology and Otology.

SIDNEY G. ASHMORE, A. M., L. H. D.,
Professor of the Latin Language and Literature.

FREDERIC C. CURTIS, M. D.,
Professor of Dermatology.

LEWIS BOSS, A. M.,
Director of Dudley Observatory.

ALFRED B. HUESTED, M. D., PH. G.,
Professor of Botany and Materia Medica.

GUSTAVUS MICHAELIS, PH. G.,
Professor of Pharmacy.

HENRY HUN, M. D.,
Professor of Diseases of the Nervous System.

SAMUEL R. MORROW, M. D.,
Professor of Anatomy and of Orthopædic and Operative Surgery.

JAMES R. TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS W. WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK S. HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

JAMES W. EATON,
Professor of the Law of Evidence and of Contracts.

BENJAMIN H. RIPTON, PH. D., LL. D.,
Dean of Union College and Professor of History and Sociology.

J. NEWTON FIERO,
Dean of the Law School and Professor of Procedure, Equity,
Torts, Domestic Relations.

HON. SIMON W. ROSENDALE,
Lecturer on Professional Ethics.

HON. ALTON B. PARKER,
Lecturer on Trial of Causes.

HON. DANFORTH E. AINSWORTH,
Lecturer on the Statutes of New York.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

HERMAN CAMP GORDINIER, M. D.,
Professor of Physiology.

JAMES F. TRACEY,
Professor of the Law of Corporations.

Union University

WENDELL LAMOROUX, A. M.,
Librarian.*

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

HON. ALBERT C. TENNANT,
Professor of Criminal Law and the Laws of Real and Personal
Property.

LEWIS R. PARKER,
Professor of the Law of Guaranty, Suretyships and Bailments.

HON. D. CADY HERRICK,
Lecturer on Municipal Corporations.

HON. IRVING G. VANN,
Lecturer on the Law of Insurance.

HON. ALDEN CHESTER,
Lecturer on the Federal Judicial System.

HOWARD VAN RENSSELAER, M. D.,
Professor of Materia Medica and Therapeutics.

SAMUEL B. HOWE, A. M., PH. D.,
Adjunct Nott Professor (No. 4), Principal of Union School,
Schenectady.

ALBERT H. PEPPER, A. M.,
Assistant Professor of Modern Languages.

ELTON D. WALKER, B. S.,
Assistant Professor of Civil Engineering.

*Emeritus.

JOSEPH D. CRAIG, M. D.,
Adjunct Professor of Anatomy.

WILLIS GOSS MacDONALD, M. D.,
Adjunct Professor of Surgery.

GEORGE BLOOMER, M. D.,
Adjunct Professor of Histology, Pathology and Bacteriology.

HERMAN BENDELL, M. D.,
Clinical Professor of Otology.

THEODORE F. C. VAN ALLEN, M. D.,
Clinical Professor of Ophthalmology.

ANDREW MacFARLANE, M. D.,
Clinical Professor of Physical Diagnosis.

CLINTON BRADFORD HERRICK, M. D.,
Clinical Professor of Railway Surgery.

THEODORE J. BRADLEY, PH. G.,
Lecturer on Chemistry.

HON. WALTER E. WARD,
Lecturer on the Law of Patents, Copyrights and Trade Marks.

HOWARD OPDYKE, A. B.,
Assistant Professor of Physics.

JOHN I. BENNETT, A. B.,
Assistant Professor of Greek.

ARTHUR JAY ROY, C. E., A. M.,
Assistant in Dudley Observatory.

JOHN V. HENNESSY, M. D.,
Adjunct Professor of Materia Medica.

FLETCHER W. BATTERSHALL,
Lecturer on Elementary Law.

FRANK RICHARDSON, PH. G.,
Instructor in Materia Medica and Director of the
Pharmaceutical Laboratory.

LEO HAENDEL NEUMAN, M. D.,
Lecturer on Symptomatology and Diseases of the Stomach
and Intestines.

WILLIAM GRANT LEWI, M. D.,
Lecturer on Pharmacy.

JESSE M. MOSHER, M. D.,
Lecturer on Insanity.

ARTHUR W. ELTING,
Lecturer on Clinical Microscopy.

ARTHUR GUERNSEY ROOT, M. D.,
Lecturer on Diseases of the Throat and Nose.

WILLIAM OLIN STILLMAN, M. D.,
Lecturer on History of Medicine.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

GEORGE EMORY LOCHNER, M. D.,
Instructor in Obstetrics.

CHARLES HENRY MOORE, M. D.,
Instructor in Ophthalmology and Otology.

THOMAS WILLIAMS JENKINS, M. D.,
Instructor in Histology and Pathological Anatomy.

THOMAS ADDIS RYAN, M. D.,
Instructor in Surgery.

WILFRED SYLVESTER HALE, M. D.,
Instructor in Anatomy.

WILLIAM B. VARNUM, A. B.,
Assistant in Dudley Observatory.

DE BAUN VAN AKEN, PH. G.,
Lecturer on Pharmacy.

CLEMENT F. THEISEN, M. D.,
Instructor in Diseases of the Throat and Nose.

LANSING B. WINNE, M. D.,
Instructor in Clinical Medicine.

JAMES T. McKENNA, M. D.,
Instructor in Physiology.

JAMES M. MOORE, M. D.,
Instructor in Orthopædics.

JOHN W. H. POLLARD, B. L.,
Instructor in Physical Culture.

HORACE T. EDDY, B. E. E., E. E.,
Instructor in Electrical Engineering.

CHARLES HARPER RICHARDSON, M. D.,
Instructor in Surgery and Assistant Demonstrator in Anatomy.

WILLIAM PITNEY BRIERLEY, M. D.,
Instructor in Obstetrics.

HARRY JUDSON LIPES, M. D.,
Instructor in Obstetrics.

JOHN LEWIS MARCH, A. M.,
Instructor in Modern Languages.

CURTIS C. BUSHNELL, A. M., PH. D.,
Instructor in Latin.

LINDSAY DUNCAN, B. S.,
Instructor in Mathematics, Drafting and Surveying.

THEODORE JAMES BRADLEY, PH. G.,
Instructor in Chemistry.

SPENCER LYMAN DAWES, M. D.,
Instructor in Theory and Practice of Medicine.

WILLIAM HENRY HAPPEL, M. D.,
Instructor in Therapeutics.

ARTHUR SAUTTER, M. D.,
Instructor in Dermatology.

WARREN HARKNESS EVERETT, M. D.,
Instructor in Embryology.

UNION COLLEGE

ACADEMIC DEPARTMENT OF

UNION UNIVERSITY

SCHENECTADY, N. Y.

UNION COLLEGE

Union College was incorporated by the Regents of the University of the State of New York, on the 25th day of February, 1795. It was the second college incorporated in the State, and the first north of the city of New York and west of the Hudson River. It received its name from the circumstance that several religious denominations co-operated in its organization, and was the first college in the United States which was not of a strictly denominational character. It has continued from its foundation to be the representative institution of Christian unity.

The first president of Union College was the Rev. John Blair Smith, of Philadelphia. He was elected in 1795, and resigned in 1799, only a few months before his death. He was succeeded by Jonathan Edwards, the younger, who died in 1801. The Rev. Jonathan Maxcy, previously president of Brown University, succeeded Dr. Edwards, and resigned at the end of two years. In 1804, the Rev. Eliphalet Nott was elected president of Union College, which office he held until his death, on the 29th day of January, 1866. The Rev. Laurens P. Hickok, a graduate of the College, who had long acted as vice-president, was elected his successor. He resigned in 1868. The Rev. Charles A. Aiken succeeded Dr. Hickok in 1869, and resigned in 1871. The Rev. Eliphalet Nott Potter was elected president in 1871, and inaugurated June 20, 1872. On his resignation, in 1884, the Hon. Judson S. Landon, LL. D., was appointed president *ad interim*, and served until the inauguration of Harrison E. Webster, LL. D., who was elected president May 23, 1888, and inaugurated June 26, 1888. On his resignation in January, 1894, Rev. A. V. V. Raymond, D. D., LL. D., was elected president and inaugurated in June, 1894.

OFFICERS OF UNION COLLEGE

Trustees

- | | | |
|-------------|---|--|
| Ex-Officio. | { | HIS EXCELLENCY THEODORE ROOSEVELT, Governor. |
| | | HON. TIMOTHY L. WOODRUFF, Lieut.-Governor. |
| | | HON. JOHN T. McDONOUGH, Secretary of State, |
| | | HON. WILLIAM J. MORGAN, Comptroller. |
| | | HON. JOHN P. JAECKEL, Treasurer. |
| | | HON. JOHN C. DAVIES, Attorney-General. |
- SILAS B. BROWNELL, LL. D., 71 Wall street, New York.
- REV. WILLIAM IRVIN, D. D., New York.
- HON. JUDSON S. LANDON, LL. D., Schenectady.
- HON. EDWARD W. PAIGE, LL. D., New York.
- WM. H. H. MOORE, A. M., 51 Wall street, New York.
- REV. DENIS WORTMAN, D. D., Saugerties.
- HON. JOHN H. STARIN, Pier 18, N. R., New York.
- HON. JOHN A. DE REMER, A. M., Schenectady.
- CLARK BROOKS, A. M., 54 William street, New York.
- REV. GEORGE ALEXANDER, D. D., 10th street and University place, New York.
- HON. WARNER MILLER, LL. D., Herkimer.
- NICHOLAS V. V. FRANCHOT, A. M., Olean, N. Y.
- REV. DAVID SPRAGUE, A. M., Amherst, Mass., term of office
expiring June, 1900.
- EDGAR S. BARNEY, A. M., 36 Stuyvesant street, New York,
term of office expiring June, 1901.
- REV. PHILIP H. COLE, A. M., Syracuse, N. Y., term of office
expiring June, 1902.
- GEN. DANIEL BUTTERFIELD, 616 Fifth avenue, New York,
term of office expiring June, 1903.

Finance Committee

HON. JUDSON S. LANDON, LL. D.

HON. JOHN H. STARIN

HON. JOHN A. DEREMER, A. M.

CLARK BROOKS, A. M.

W. H. H. MOORE, A. M.

HON. NICHOLAS V. V. FRANCHOT, A. M.

Instruction Committee

REV. GEORGE ALEXANDER, D. D.

HON. SILAS B. BROWNELL, LL. D.

EDGAR S. BARNEY, A. M.

REV. PHILIP H. COLE, A. M.

Treasurer

GILBERT K. HARROUN, ESQ.

Secretary

CLARK BROOKS, A. M.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

HENRY WHITEHORNE, LL. D.,
Nott Professor (No. 1) of the Greek Language and Literature.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature, and Lecturer on
Current History.

MAURICE PERKINS, A. M., M. D.,
Nott Professor (No. 3) of Analytical Chemistry.

SIDNEY G. ASHMORE, A. M., L. H. D.,
Professor of the Latin Language and Literature.

JAMES R. TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS W. WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK S. HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

BENJAMIN H. RIPTON, PH. D., LL. D., DEAN,
Professor of History and Sociology.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

WENDELL LAMOROUX, A. M.,
Librarian.*

*Emeritus.

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

ALBERT H. PEPPER, A. M.,
Assistant Professor of Modern Languages.

ELTON D. WALKER, B. S.,
Assistant Professor of Civil Engineering.

HOWARD OPDYKE, A. B.,
Assistant Professor of Physics.

JOHN I. BENNETT, A. B.,
Assistant Professor of Greek.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

SAMUEL B. HOWE, A. M., PH. D.,
Adjunct Nott Professor (No. 4), Principal of Union School.

JOHN W. H. POLLARD, B. L.,
Instructor in Physical Culture.

HORACE T. EDDY, B. E. E., E. E.,
Instructor in Electrical Engineering.

JOHN LEWIS MARCH, A. M.,
Instructor in Modern Languages.

CURTIS C. BUSHNELL, A. M., PH. D.,
Instructor in Latin.

LINDSAY DUNCAN, B. S.,
Instructor in Mathematics, Drafting and Surveying.

COLLEGE OFFICERS

GILBERT K. HARROUN,
Treasurer.

WENDELL LAMOROUX, A. M.,
Librarian Emeritus.

PETER NELSON, A. B.,
Acting Librarian.

JAMES H. STOLLER, PH. D.
Curator of the Museum.

MRS. M. L. PEISSNER,
Registrar.

JOHN W. H. POLLARD, B. L.,
Director of Gymnasium.

R. T. McCORD,
Accountant and President's Secretary.

GEORGE CLUTE,
Superintendent of Grounds and Buildings.

Standing Committees of the Faculty

EDUCATION. — Professors Ripton, Whitehorne, Wells, Perkins, Ashmore, Truax, Wright, Hoffman, Landreth, Hale and Stoller.

LIBRARY. — Professors Wright, Hale and Jones.

CURRICULUM AND CATALOGUE. — Professors Ripton, Bennett and Opdyke.

SCHOLARSHIPS. — Professors Ripton, Walker and Bennett.

STAGE APPOINTMENTS. — Professors Wright, Stoller and Walker.

ATHLETICS. — Professors Opdyke and Perkins, and Mr. Pollard.

RULES. — Professors Ashmore, Wright and Hoffman.

SENIOR CLASS. — Professors Whitehorne, Pepper and Opdyke.

JUNIOR CLASS. — Professors Hoffman, Walker and Stoller.

SOPHOMORE CLASS. — Professors Hale and Bennett, and Mr. Eddy

FRESHMAN CLASS. — Professors Truax and Jones, and Mr. March.

PREPARATORY SCHOOLS. — Professors Pepper, Bennett, Opdyke and Jones, and Messrs. Pollard, Eddy, Bushnell, March and Duncan.

ADMISSIONS. — Professors Ripton, Truax, Ashmore, Wright, Stoller, Pepper and Bennett.

Abbreviations

e., A. B. course; *s.*, B. S. course; *g. e.*, B. E. course in General Engineering; *s. e.*, B. E. course in Sanitary Engineering; *e. e.*, B. E. course in Electrical Engineering; *ls.*, Ph. B. course; N. C., North College; S. C., South College.

Is ARCHIBALD LAMON ANDERSON, *Ballston Springs*. .69 N. C.
Is MELVIN THOMAS BENDER.....*Albany*.....A Δ Φ House
Is LELAND LOWELL BOORN.....*Schenevus*.....Φ Δ Θ House
c LESLIE NATHAN BROUGHTON .*Delhi*.....15 S. C.
c WILLARD DAYTON BROWN....*Lawyersville*.....89 N. C.
c EVERETT GARNSEY BROWNELL,*Ballston Springs,*
Φ Δ Θ House
Is WILL CLYDE CAMPBELL.....*Chicago, Ill.*....Φ Γ Δ House
c EVAN R. CULLINGS.....*Gifford*.....30 S. C.
Is CARL PORTER DALTON.....*Salamanca*.....48 S. C.
Is FREDERICK MORTIMER DAVIS.*New York City,*
B Θ II House
c JOHN DANIEL EDWARDS.....*Corinth*.....Φ Δ Θ House
c JOHN JACKSON ELLIOTT.....*Andes*.....41 S. C.
c GEORGE W. FEATHERSTONHAUGH, JR., *Schenectady,*
18 S. Church St.
c ANDREW CLARENCE FENTON..*Andes*.....41 S. C.
c LESTER THOMAS HUBBARD...*Cohoes*.....Cohoes

- c* HERMAN BULLOCK JONES.....*Himrod*.....6 S. C.
ee ARTHUR HAMILTON LAWTON..*Nyack*.... 18 Nott Terrace
c WILLIAM DEWEY LOUCKS....*Albany*.....Ψ Υ House
ee CHARLES H. MACCULLOCH...*Albany*.....3 Eagle St.
c DOUGLAS WARNER PAIGE..*Schenectady*. 17 Washington Ave
c CHARLES EDGAR PALMER, JR.,*Schenectady*, 123 Nott Terrace
c CLAYTON JOHNSON POTTER...*Glenville*.....X Ψ Lodge
c GEORGE ERNEST RAITT.....*Newburgh*....K. A. Rooms
ls STEPHEN SMITH READ.....*Bath*.....17 S. C.
ee LEROY ORMAN RIPLEY.....*Cooperstown*...Φ Δ Θ House
ee LAFCREST GEORGE ROBINSON, *Plattsburgh*....Φ Δ Θ House
ls ERSKINE C. ROGERS.....*Sandy Hill*.....X Ψ Lodge
c EUGENE MARTIN SANDERS...*St. Johnsville*.....9 S. C.
ge WALTER LYNES SMITH.....*Chicopee Falls, Mass.*,
45 S. C.
c PHILIP LIVINGSTON THOMSON ..*Schenectady*, 20 N. Church St
c JOHN MITCHELL TUGGEY.....*Trout River*.....54 N. C.
ls WAGNER VAN VLACK.....*Palatine Bridge*, Ψ Υ House
c EMIL LEWIS WINTERBERG....*Tioga, Pa.*.....13 S. C.
Seniors, 33.

Juniors. Class of 1901

- e* ROY EDWIN ARGERSINGER....*Johnstown*.....21 S. C.
c HENRY SAMES BÄHLER.....*Schenectady*..242 Green St.
c HARRY ALVIN BARRETT.....*Albany*.....Φ Δ Θ House
e CHARLES JOSEPH BENNETT...*Amsterdam*...B Θ Π House
e LEWIS S. BENTON.....*Phelps*.....77 N. C.
ls ROBERT ANDREW BOWDEN....*Schenectady*.....26 S. C.
c HORATIO JONES BROWN.....*Schenectady*. 12 N. Church St.

<i>e</i>	JOHN PATRICK CARVER.....	<i>Westport</i>	85 N. C.
<i>c</i>	JAMES WALTON CHEESEBOROUGH,	<i>Biltmore, N. C.</i>	22 S. C.
<i>c</i>	JOSEPH HARVEY CLEMENTS, JR.,	<i>Schenectady,</i>	
		502 Hamilton St.	
<i>c</i>	JOHN HAWLEY COOK.....	<i>Albany</i>	Φ Γ Δ House
<i>ls</i>	HERBERT L. FULLER.....	<i>Waterport</i>	Φ Γ Δ House
<i>c</i>	ARTHUR SPENCER GOLDEN...	<i>Rensselaerville</i> ..	X Ψ Lodge
<i>c</i>	EVERETT THEODORE GROUT..	<i>Cooperstown</i> ...	Φ Δ Θ House
<i>e</i>	GEORGE HACKETT	<i>Utica</i>	6 Quackenbos St.
<i>c</i>	GARDINER KLINE.....	<i>Amsterdam</i>	A Δ Φ House
<i>ls</i>	JOHN LUDDEN.....	<i>Troy</i>	Φ Δ Θ House
<i>c</i>	JOHN McNAB.....	<i>Schenectady</i> ..	13 Romeyn St.
<i>ls</i>	PORTER LEE MERRIMAN.....	<i>Albany</i>	Ψ Υ House
<i>s</i>	JAMES WADSWORTH MILLER, JR.,	<i>Johnstown</i>	22 S. C.
<i>s</i>	LEOPOLD MINKIN.....	<i>Albany</i>	25 S. C.
<i>s</i>	JOHN E. PARKER.....	<i>Georgetown, S. C.</i> ...	73 N. C.
<i>c</i>	RODMAN HAZARD ROBINSON..	<i>Brandon, Vt.</i>	6 High St.
<i>c</i>	GEORGE LeROY SHELLEY	<i>Amsterdam</i>	Φ Δ Θ House
<i>c</i>	EARL BROWN SLACK.....	<i>Groton</i>	B Θ Π. House
<i>e</i>	LEVI LEWIS SUMERISKI.....	<i>Fairport</i>	87 N. C.
<i>ls</i>	WELLINGTON EUGENE VAN WORMER,	<i>Middleburgh,</i>	
		B Θ Π. House	
<i>c</i>	CHARLES PORTER WAGONER..	<i>Albany</i>	A Δ Φ House
<i>e</i>	RICHARD FRANCHOT WARNER.	<i>Rochester</i>	78 N. C.
<i>ls</i>	LeROY J. WEED	<i>Binghamton</i>	Ψ Υ House
<i>c</i>	THOMAS HERBERT WIGHT....	<i>Andes</i>	48 S. C.
	Juniors, 31.		

Sophomores. Class of 1902

<i>ls</i>	S. LEON BAHNY.....	<i>Olean</i>	28 S. C.
<i>c</i>	SEMY BAÏZ.....	<i>New York City</i>	57 N. C.
<i>c</i>	EVERETT J. BEST.....	<i>Elk Creek</i> ..	13 Landon Terrace
<i>ls</i>	LESTER W. BLOCH.....	<i>Albany</i>	32 S. C.
<i>c</i>	H. BURDETT CLEVELAND....	<i>Amsterdam</i>	70 N. C.
<i>s</i>	DANIEL VEDDER CLUTE.....	<i>Schenectady</i> ..	4 Nott Terrace
<i>c</i>	THEODORE DEL. COFFIN.....	<i>Glens Falls</i>	74 N. C.
<i>c</i>	WALTER ALLEN COWELL.....	<i>Albany</i>	90 N. C.
<i>c</i>	HARRY LAURENS CRAIN.....	<i>Marathon</i>	A Δ Φ House
	RAYMOND R. CRIM.....	<i>Middleville</i>	X Ψ Lodge
<i>c</i>	DAVID MONTGOMERY DUNNING, JR.,	<i>Auburn</i> ..	Ψ Υ House
<i>c</i>	WILLIAM HUGH GILLESPIE, <i>New Brighton, S. I.,</i>		X Ψ Lodge
<i>c</i>	DICKINSON EARNEST GRIFFITH, <i>Watertown,</i>	Φ Δ Θ House	
	JOHN DENNETTE GUTHRIE... <i>Smithville, Va</i>	58 N. C.	
<i>c</i>	NEILSON C. HANNAY.....	<i>Rynex Corners</i>	16 S. C.
<i>c</i>	DONALD CARLTON HAWKES.. <i>Elmira</i>	Ψ Υ House	
<i>c</i>	WALTER ENNIS HAYS.....	<i>Albany</i>	Φ Δ Θ House
<i>ls</i>	ADDISON HOTALING HINMAN.. <i>Albany</i>	A Δ Φ House	
<i>c</i>	ROBERT BRUCE HOADLEY.... <i>Binghamton</i>	A Δ Φ House	
<i>c</i>	HARRY C. HOYT.....	<i>Kalamazoo, Mich.</i> ,	A Δ Φ House
<i>c</i>	WILLIAM GEORGE KEENS.....	<i>Albany</i>	Φ Δ Θ House
<i>c</i>	J. HOWARD MACKEY.....	<i>Stamford</i>	Φ Δ Θ House
<i>c</i>	FRASER METZGER.....	<i>Freehold</i> , 311 Lark St.,	Albany
<i>c</i>	FRANK WATKIN NEARY.....	<i>Cohoes</i>	Φ Γ Δ House
<i>c</i>	GEORGE ISRAEL OAKLEY.....	<i>East Williston</i>	90 N. C.
<i>c</i>	FRANK TAYLOR OSTRANDER.. <i>Albany</i>	X Ψ Lodge	
<i>s</i>	HOWARD MARSHFIELD PARSONS, <i>Batavia,</i>	South Colonnade	

	ARTHUR SHELDON RAYMOND, <i>Lincoln, Neb.</i> , A Δ Φ House
c	JOSEPH MILTON RUSSUM..... <i>Schenectady</i> ..928 Albany St.
ls	HOWARD EMMETT SANDS..... <i>Jordan</i>.....Φ Γ Δ House
e	DAVID JOSEPH SHAW..... <i>Auburn</i>.....63 N. C.
e	JAMES H. SMALL, JR..... <i>Charleston, S. C</i> ...73 N. C.
c	ARTHUR LONSON SOUTH..... <i>Birchton</i>.....9 Park Place
ls	FRANK LAURENCE STILES... <i>Lansingburgh</i> ...Ψ Y. House
e	FENWICK M. THEBO..... <i>Fort Edward</i>.....71 N. C.
e	HARRY REEVES WILSON..... <i>Albany</i>.....74 N. C.
	GILBERT SYLVESTER WOOLWORTH, <i>Watertown</i> , Φ Δ Θ House
ls	ROBERT CHAUNCEY YATES... <i>Schenectady</i> ...514 State St.
s	WILLARD STUART YATES.... <i>Lincoln, Neb.</i> , A Δ Φ House
	Sophomores, 39.

Freshmen. Class of 1903

e	WILLIAM FRANCIS ACHESON. <i>Troy</i>.....91 N. C.
gr s	FREDERICK JANSON BALZ... <i>Amsterdam</i>.....93 N. C.
c	ROBERT FINNEY BARRETT.. <i>Lansingburg</i> .. Φ Δ Θ House
s	ARTHUR ERNEST BISHOP.... <i>Oneonta</i> ..13 University Pl.
c	JOHN ALBERT BOLLES..... <i>Kortright</i>.....59 N. C.
ls	GUERNSEY J. BORST..... <i>Seward</i>.....62 N. C.
s	DONALD OERNST BOUDEMAN, <i>Kalamazoo, Mich.</i> A Δ Φ House
s	HARRY NEWMAN BOWLER... <i>Amsterdam</i> ...B Θ II. House
e	GEORGE HENRY BROWN, <i>Housatonic, Mass.</i> , Φ Γ Δ House
s	JOSEPH R. BROWN, JR..... <i>Seward</i>.....62 N. C.
ls	CURTIS DANIEL BUNTING... <i>Hamburg</i> ..3 University Pl.
c	ARTHUR PRESTON CLARK... <i>Jordan</i>.....Φ Γ Δ House
ls	MOREY CHARLES COLLIER... <i>Savona</i>.....17 S. C.

<i>c</i>	FRANK H. DALEY	<i>Coxsackie</i>	846 Union St.
<i>c</i>	THOMAS G. DELBRIDGE	<i>Batavia</i>	South Colonnade
<i>e</i>	WILLIAM JAY DICKENSON	<i>Flycreek</i>	58 N. C.
<i>c</i>	GEORGE WILLIAM DONNAN	<i>Troy</i>	6 High St.
<i>c</i>	RAYMOND CURTIS DONNAN	<i>Troy</i>	6 High St.
<i>s</i>	CHARLES C. FALCONER	<i>Waterford</i>	30 S. C.
<i>ls</i>	JOSEPH GEORGE FENSTER	<i>Troy</i>	47 S. C.
<i>c</i>	RAY FREDERICK FINCH	<i>Roscoe</i>	54 N. C.
<i>e</i>	LAURENCE J. GALLAGHER	<i>Troy</i>	Troy
<i>ls</i>	ERNEST ECKERT GILLETTE	<i>Albany</i>	9 High St.
<i>e</i>	ROBERT GORDON	<i>Idlewild</i>	Φ Δ Θ House
<i>ls</i>	NORMAN NORTON GOULD	<i>Penn Yan</i>	6 S. C.
<i>ls</i>	JOHN GARSIDE GREEN	<i>Cohoes</i>	A Δ Φ House
<i>s</i>	GUY BROWN GRISWOLD	<i>Whitehall</i>	Φ Γ Δ House
<i>s</i>	WILLIAM GOODING HARTIN	<i>Mayfield</i>	13 S. C.
<i>s</i>	CLINTON BENJAMIN HAWN	<i>Albany</i>	Φ Δ Θ House
<i>e</i>	JOHN E. HEALEY, JR.	<i>Troy</i>	Φ Δ Θ House
<i>s</i>	ARTHUR HOLLEY	<i>Pineville</i>	54 N. C.
<i>ls</i>	R. FENTON HOWE	<i>Poland</i>	X Ψ Lodge
<i>e</i>	HERBERT G. HOXIE	<i>Cambridge</i>	X Ψ Lodge
<i>c</i>	EUSTACE HULSAPPLE	<i>Watervliet</i>	Ψ Y House
<i>gr s</i>	LEWIS TIFFANY HUNT	<i>Ephratah</i>	21 S. C.
<i>ls</i>	GAIL BORDEN JENKINS	<i>Honesdale, Pa.</i>	

846 Union St.

<i>s</i>	ALBERT HENRY KESSLER	<i>Schenectady</i>	1 College St.
<i>c</i>	WILLIAM HENRY KROEGER	<i>Fort Hunter</i>	14 S. C.
<i>e</i>	CARL RODERIC KRUEGER	<i>Schenectady</i>	211 Liberty St.
<i>ls</i>	ARCHIBALD ALLEN LEE	<i>Albany</i>	A Δ Φ House
<i>ls</i>	ANDREW WRIGHT LENT	<i>Highland</i>	842 Union St.

- e* OTIS F. LEWIS.....*Gilboa*.....58 N. C.
- gr s* BENJAMIN JULIUS LOWENSTEIN, *Amsterdam*....93 N. C.
- e* GEORGE CLYMER MACFARLANE, *Towanda, Pa.*
A Δ Φ House
- ls* GEORGE CAMERON MACKENZIE, *Elmira*,
725 East Liberty St.
- gr s* SAMUEL J. McMILLAN*Duanesburg*..724 Union St.
- e* SABAS MENESES.....*Santiago, Cuba*, 711 Union St.
- ls* JOSEPH RIGHT MICKLE, JR., *Fonda*...North Colonnade
- e* SANFORD A. MOELLER.....*Albany*...North Colonnade
- e* JAMES FRANKLIN MORGAN..*Fort Edward*.....71 N. C.
- e* FRANCIS JAMES MULVANEY..*Worcester*.... .44 S. C.
- e* GLOWACKI PARKER.....*Batavia*.....78 N. C.
- c* HENRY ARTHUR PEARCE...*Plainfield, N. J.*, 27 S. C.
- e* ARTHUR DANIEL PECK....*Cooperstown*... 31 Front St.
- ls* ALLEN STEELE PECK*Batavia*.....77 N. C.
- e* JAMES GARFIELD PERKINS..*Albany*.....9 High St.
- e* ARTHUR GUY PICKENS.....*Cooperstown*...Φ Δ Θ House
- ls* FREDERIC H. POWELL.....*Worcester*.....59 N. C.
- e* WILLIAM RICHARD PRITCHARD..*Bluffton, S. C.*, 73 N. C.
- e* LAFAYETTE CLOW REYNOLDS..*Fonda*, 806 Stanley St.
- s* EDWARD HOLLAND RIDER...*Unadilla*21 S. C.
- c* BERT WILLIAM ROY*Clyde*.....27 S. C.
- ls* LOUIS F. SCHROEDER... .*Port Leyden*....Φ Γ Δ House
- s* WILBER E. SHELDON...*Lisbon Centre*, 15 No. College St.
- s* JOHN LEOPOLD STAEBER...*Lancaster*.....44 S. C.
- s* LEROY NELSON TAYLOR...*Gloversville*.....11 S. C.
- ls* THOMAS RICHARD TILLOTT, JR., *Auburn*...228 Union St.
- c* GORDON EMMONS VAN LOON..*Coxsackie*, 846 Union St.
- s* GEORGE WALRATH.....*St. Johnsville*.....9 S. C.

Is DEFOREST WILLIAMS WEED... *Binghamton*, Ψ . Y. House
 e JUDSON T. WELLS..... *Amsterdam*47 S. C.
 Freshmen, 71.

Irregular Students

LEWIS MORGAN BLOOMINGDALE, *New York City*, A Δ Φ House
 HERBERT C. BOTHWELL..... *Albany*..... Ψ Y House
 HOWARD POTTER DUNHAM... *Schenectady*, 347 Summit Ave
 JAMES E. FINEGAN..... *Beekmantown*.....14 S. C.
 CLINTON JONES..... *Schenectady*..... Φ Γ Δ House
 ARTHUR BURTIS LAWRENCE.... *Quogue*..... K. A. Rooms
 GEORGE ELWOOD PIKE..... *Sanborn*..... B Θ Π House
 CLARENCE DONALD STEWART... *Amsterdam*... A Δ Φ House
 Irregular Students, 8.

Summary of Students

Seniors	33
Juniors.....	31
Sophomores	39
Freshmen.....	71
Irregular Students	8
Post Graduates.....	1
Total.....	183

COURSES OF STUDY

1.—Course leading to the degree of A. B.

This is the usual classical course. Latin and Greek are required for two years and are elective for the remainder of the course. French and German are included in addition to the ancient languages.

2.—Course leading to the degree of Ph. B.

This course offers Latin without Greek for which is substituted additional work in modern languages and science.

3.—Course leading to the degree of B. S.

This course is based upon the study of mathematics and the sciences, with extended work in English and other modern languages.

In courses 1, 2 and 3 the greater part of the work of the last two years is elective.

4.—General course leading to the degree of B. E.

This course is intended to give the basis of an Engineering education, including the fundamental principles of all special branches of the profession, a knowledge of both French and German, and a course in English.

5.—Sanitary course leading to the degree of B. E.

This differs from course 4 in substituting special work in Sanitary Engineering for some of the General Engineering studies.

6.—Electrical course leading to the degree of B. E.

This differs from course 4 in substituting special work in Electricity and its applications, in place of some of the General Engineering studies.

Students having the profession of Medicine in view are permitted to take the first year studies of the Albany Medical College as a substitute for the studies of the first two terms of the senior year in Union College. This enables medical students to lessen the time of their academic and professional studies by one year.

For tuition charges, see page 86.

ADMISSION

General Conditions

The regular entrance examinations are held on Thursday and Friday immediately following Commencement; and on the Tuesday, Wednesday and Thursday of the first week of the Fall term as indicated in the calendar; also, at the opening of any term. Special provision will be made, on application, for June entrance examinations to be held in other places to suit the convenience of applicants.

Candidates must be at least sixteen years old, and, as a preliminary to the entrance examinations they must, on the first day set for examinations, (see p. 42,) present to the President satisfactory testimonials of character, and register for the necessary examinations.

Candidates from other colleges must bring letters of honorable dismissal, and must pass satisfactory examinations, or present acceptable certificates.

Candidates for a degree must enter before the close of the first Senior term.

All candidates will be examined in the English requirements, but in other subjects, pass cards and certificates of the Regents of the University of the State of New York, and diplomas of schools approved by the Faculty, will be accepted so far as they cover the above requirements. *Principals are requested to state, in connection with the diplomas, the exact ground which they cover, both as to kind and amount of work.*

Candidates for any other than the Freshman class are examined also in all studies previously pursued by that class.

Requirements for Examination in 1900

I. A. B. COURSE

Candidates for admission to the course leading to the degree of A. B. will be examined in the following subjects:

1.—ENGLISH.

All candidates for admission to the Freshman class in any of the regular courses will be required to pass a written examination in English, and no candidate will be admitted whose work is seriously defective in spelling, punctuation, grammar, or division into paragraphs.

Questions will be set on topics and extracts drawn from the following books. The first list consists of works to be read carefully with a view to the absorption of the subject matter, *i. e.*, as books are generally read. The second list consists of books to be read with critical care, in annotated editions, and with reference to dictionary, grammar and rhetoric. The questions on this set will relate to literary form and logical structure as well as to substance.

LIST (1) FOR GENERAL READING.

Dryden's "Palamon and Arcite;" Pope's "Iliad," Books I and XXII; the Sir Roger de Coverley Papers in "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Scott's "Ivanhoe;" DeQuincey's "Flight of a Tartar Tribe;" Cooper's "The Last of the Mohicans;" Tennyson's "Princess;" Lowell's "Vision of Sir Launfal."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Milton's "Paradise Lost;" Burke's "Speech on Conciliation with America;" Macaulay's "Essays on Milton and Addison."

An acquaintance with the general outline of the development of English literature will also be required. Stopford Brooke's, or Kellogg's "English Literature," and Pancoast's "Introduction to English Literature," are recommended.

Attention is called to the fact that while no examination in grammar or rhetoric, as such, will occur, yet a knowledge of the essential principles of grammar and of the elementary principles of rhetoric is involved in the above requirements.

The practice of frequently writing brief compositions on themes drawn from the foregoing lists is recommended as a very helpful feature of the preparation; and instructors are urged to lay stress on the importance of correctness and effectiveness of expression.

2.—MATHEMATICS.

Arithmetic; Algebra, through Quadratics; Plane Geometry.

In Arithmetic the examination will be on the following subjects: factors and multiples, common and decimal fractions, square root, the more important tables and operations of denominate numbers, percentage and simple interest, compound interest for integral periods only, bank discount, stocks and bonds, and the metric system.

In his preparation in Algebra, the candidate should give special attention to factoring, fractional exponents and radicals, and the solution of quadratic equations by factoring and by the formula resulting from the solution of the equation $ax^2+bx+c=0$.

3.—LATIN.

(a.) Latin Grammar and Latin Composition (Daniell's "Exercises in Latin Composition," or an equivalent); four books of Cæsar's Gallic War, or Arrowsmith and Whicher's "First Latin Readings" (preferred); six books of Vergil's *Æneid*; six orations of Cicero; two thousand lines of Ovid, or an equivalent; the "Roman Method" of pronunciation.

The Grammars of Bennett, Allen and Greenough, Harkness, and Gildersleeve-Lodge are recommended.

(b.) Roman History, including Ancient Geography.

4.—GREEK.

(a.) Goodwin's Greek Grammar; Goodwin's Greek Reader, 100 pages, or Xenophon's *Anabasis*, four books: Homer's *Iliad*, three books.

(b.) Greek History, including Ancient Geography.

[The attention of instructors is particularly directed to the student's need of a full and accurate knowledge of the Greek and the Latin Grammar. Deficiency in this knowledge will prevent admission.]

5.—MODERN GEOGRAPHY.

6.—HISTORY OF THE UNITED STATES.

7.—PHYSIOLOGY.

II. PH. B. COURSE.

Candidates for admission to the Freshman class in the course leading to the degree of Ph. B. will be examined in the following subjects:

1.—ENGLISH, as for the A. B. Course, page 36.

2.—MATHEMATICS, as for the A. B. Course, page 37.

3.—LATIN, as for the A. B. Course, page 37.

4.—FRENCH or GERMAN, at the option of the candidate, the requirements being as follows:

IN FRENCH.—

A knowledge of grammar, implying familiarity with the following topics:

Inflection of nouns and adjectives in gender and number, the partitive constructions, the use of pronouns, especially the forms and positions of personal pronouns; the conjugation of regular and of the more usual irregular verbs; the

use of moods and tenses, government of infinitives and ordinary idioms.

Ability to translate at sight easy French prose into English, and simple English sentences into French. The candidate must have read concurrently with the work in the grammar, at least 200 pages of prose and poetry from various standard authors.

IN GERMAN.—

A knowledge of grammar, comprising declension of nouns, adjectives and pronouns; conjugation of verbs; the simpler rules of syntax and word-order.

Ability to translate at sight a passage of easy German prose, a vocabulary of the less usual works being given; and to convert simple English sentences into German. The candidate must have read, concurrently with the work in the grammar, at least 100 pages of prose and poetry from various standard authors.

5.—MODERN GEOGRAPHY.

6.—HISTORY OF THE UNITED STATES.

7.—PHYSIOLOGY.

III. B. S. COURSE

Candidates for admission to the Freshman class in the course leading to the degree of B. S. will be examined in the following subjects.

1.—ENGLISH, as for the A. B. Course, page 36.

2.—MATHEMATICS, as for the A. B. Course, page 37.

3.—ADDITIONAL MATHEMATICS.

(a.) SOLID GEOMETRY.

(b.) PLANE TRIGONOMETRY.

- 4.—FRENCH OR GERMAN, as for the Ph. B. Course; or
LATIN, as for the A. B. Course, pages 37, 38, 39.
- 5.—MODERN GEOGRAPHY.
- 6.—HISTORY OF THE UNITED STATES.
- 7.—PHYSIOLOGY.

IV., V. and VI. B. E. COURSES

Candidates for admission to the Freshman class in any of the courses leading to the degree of B. E. will be examined in the same subjects that are required for admission to the B. S. Course, page 39.

Requirements for Examination in 1901

IN ENGLISH IN ALL COURSES.

LIST (1) FOR GENERAL READING.

Scott's "Ivanhoe;" Pope's "Iliad," Books I., VI., XXII., and XXIV.; "The Sir Roger de Coverley Papers" in the "Spectator;" Goldsmith's "Vicar of Wakefield;" Cooper's "Last of the Mohicans;" Tennyson's "Princess;" Coleridge's "Ancient Mariner;" Eliot's "Silas Marner;" Shakespeare's "Merchant of Venice."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Burke's "Speech on Conciliation with America;" Macaulay's "Essay on Milton" and "Essay on Addison;" Milton's Minor Poems; "Lycidas," "Comus," "L'Allegro," "Il Penseroso."

All other requirements as in 1900.

Requirements for Examination in 1902

IN ENGLISH IN ALL COURSES.

LIST (1) FOR GENERAL READING.

Shakespeare's "Merchant of Venice;" Pope's "Homer's Iliad," books I., VI., XXII. and XXIV.; Addison's "The Sir Roger de Coverley Papers" from "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Rime of the Ancient Mariner;" Scott's "Ivanhoe;" Cooper's "The Last of the Mohicans;" Tennyson's "The Princess;" George Eliot's "Silas Marner;" Lowell's "Vision of Sir Launfal."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's "Essays on Milton and Addison."

All other requirements as in 1900

ENTRANCE EXAMINATIONS

1900

Thursday, Friday, June 28, 29.

Tuesday, Wednesday, Thursday, September 18-20.

Candidates will present their credentials at the office of the President at 10 A. M. on the first day and register for examination.

Only those who register on the first day will be admitted to the examinations of the following days.

SCHEDULE OF EXAMINATIONS

First day, Spring; Second day, Fall.

9 A. M. Arithmetic.	11 A. M. U. S. History.	2 P. M. English.
Geography.	Algebra.	
Physiology.		

Second day, Spring; Third day, Fall.

9 A. M. Latin.	11 A. M. German.	2 P. M. Greek.
Solid Geometry.	French.	Plane Geometry.
		Plane Trigonometry.

DEPARTMENTS OF INSTRUCTION

The Greek Language and Literature

PROFESSOR WHITEHORNE AND ASSISTANT PROFESSOR BENNETT.

The course of instruction in this department extends through the Freshman and Sophomore years. The object kept constantly in view throughout the course is not merely to teach so many works of an unknown tongue, but to instruct and educate the pupil by a system of mental training grounded upon the works of the most noble poets, dramatists, historians and philosophers of the ancient world. To this end the pupil is taught not only to translate into accurate and idiomatic English, to analyze with great care the grammatical construction and to compare it with that of his own tongue, but especially to obtain a thorough knowledge and critical appreciation of the authors selected for his use.

Although there must be a general uniformity in the order in which different authors are read, yet no particular works are assigned to the several terms. The proficiency of each class determines the character of the book to be read. Furthermore, an opportunity is offered to students of the two upper classes to continue their studies in this department, by assigning to them for the three terms of the Junior and Senior years respectively, three hours per week of elective work in Greek. It is not thought advisable to limit any particular subject to any one term; but, as the need of the student is made plain, the attempt will be made to satisfy it. The works presented for consideration are in general these: Greek tragedy; Several Dialogues of Plato; The History of Thucydides; The Orations of Demosthenes; The Gospels; Acts of the Apostles and the Epistles of the New Testament.

The Latin Language and Literature

PROFESSOR ASHMORE AND DR. BUSHNELL

The Freshman and Sophomore studies in this department are prescribed in the A. B. and Ph. B. courses. The Junior and Senior courses are elective. The following programme is

intended to indicate the general scope of the work of the four classes. Equivalents may be substituted at the discretion of the head of the department.

Freshman Year

1. **Livy**: Books I, XXI (Greenough and Peck, or Lord). **Tacitus**: *Germania* and *Agricola* (Hopkins), or *Histories* (Godley). Latin Composition. Four hours weekly throughout the year.

Sophomore Year

2. **Horace**: Selected Odes, Satires and Epistles (Odes by Clement Lawrence Smith; Satires and Epistles by Kirkland; or Horace entire by Page, Palmer and Wilkins). **Terence**: *Adelphoe* (Ashmore). **Plautus**: *Captivi* (Morris or Hallidie). Three hours weekly throughout the year.

Junior Year

3. **Juvenal**: Principal Satires (Hardy). Two hours weekly First Term.
4. Lectures on the private life of the ancients, with collateral reading. Two hours weekly. Open to Seniors also. Second term.
5. **Cicero's Letters** (Tyrell, Abbott, Pretor, or Kirtland.) Two hours weekly. Third term.

Senior Year

6. **Catullus** (Merrill, or Simpson). One hour weekly. First term.
7. Lectures on the monuments and topography of Rome and Athens. One hour weekly. Open to Juniors also. First term.
8. **Lucretius** (Kelsey or Lee); or Lectures etc. continued. Two hours weekly. Second term.

9. **Introductory course in Latin Epigraphy** (Lindsay's, or Egbert's, "Latin Inscriptions;" Thompson's "Handbook of Palaeography;" Johnston's "Latin Manuscripts.") Two hours weekly. Third term.

Special Honors in Latin

Candidates for special honors will undertake additional reading, to be assigned not later than the opening of the Spring Term of the Junior year, and will be examined therein at the close of their undergraduate course.

Modern Languages

PROFESSOR WELLS, ASSISTANT PROFESSOR PEPPER AND MR. MARCH

The study of modern languages is required of all students.

The primary object is to give students in every course a thorough literary training by means of the study of some of the great masterpieces of French and German literature, and to broaden their mental horizon by acquainting them, through reading and lectures, with the life and thought of the greatest nations of continental Europe.

In the classical course a knowledge of modern languages supplements and completes the linguistic and literary training obtained through the study of languages of the ancient world, and in the scientific and engineering courses the department purposes to give, through a longer and more careful study of the thought and speech of the modern world, a culture as nearly as possible equivalent to that obtained through classical study.

Another purpose is to prepare the student for special work in his chosen department. The instruction given to the classical student is immediately useful in his philological studies, and is also a preparation for more advanced work, both before and after graduation. In the scientific and engineering courses the student gains, early in the course, a knowledge of French and German that enables him to read scientific works in those languages during the later years of his course.

During the Junior and Senior years electives are offered in Spanish, and in the advanced study of French and German,

both in reading and conversation. The course in Spanish is especially recommended to students of engineering.

More advanced courses, leading to special honors in French and German, are also offered to those students who are found qualified to pursue them, by the superior excellence of their work in the required and elective courses.

The English Language and Literature

PROFESSOR TRUAX

I. English Language

1. **Anglo-Saxon Prose.**—Elements of grammar, and readings in the *Gospels*, *Aelfric*, *Aelfred*, the *Chronicles*, and *Wulfstan*. First term Junior. Three hours weekly.

2. **Anglo-Saxon Poetry.**—Reading of *Battle of Maldon*, or *Brunanburh*, *Judith*, the *Wanderer*, and portions of *Caedmon* and *Béowulf*, with attention to language, verse, and Anglo-Saxon life and character. Second term Junior. Three hours weekly.

3. **Early Middle English.**—The chief linguistic features of the Southern dialect are studied in the *Ancren Riwele*, and of the East Midland dialect in the *Ormulum*. Second term Junior (in part). Three hours weekly.

4. **English Philology.**—A systematic study of the development of the English tongue, based on the linguistic work of Courses 1, 2 and 3. Third term Junior. Three hours weekly.

II. English Literature

5. **Chaucer and the Early Poets.**—Lectures giving a brief summary of the origin of English literature and its development prior to the 14th century; study of a manual giving the characteristics of Chaucer and the chief poets of the 14th and 15th centuries, and illustrative readings. The *Prologue*, the *Knightes Tale*, and the *Nonne Preestes Tale* of the *Canterbury Tales* are read in full, and attention is directed to language, verse, literary art, ethical quality, and social life portrayed. Required in A. B., Ph. B., and B. S. courses. Second term Sophomore. Three hours weekly.

6. **Shakespeare and the Dramatists.**—Lectures and textbook study of the origin and characteristic features of the English drama, and its history to the Restoration, with critical study, literary rather than linguistic, of several of the plays of Shakespeare, selected to represent the growth of his genius, together with interpretative and assigned readings in Marlowe and other leading dramatists. Required in the second term Sophomore of the Engineering, and in the third term Sophomore of the other courses. Two hours weekly.

7. **The English Essayists.**—A brief survey of the development of English prose, and a series of critical studies of typical essays of *Bacon, Addison, Macaulay, DeQuincey and Carlyle*. Required in all courses. First term Sophomore in B. E. course. First term Junior in other courses. Three hours weekly.

8. **Prose Fiction and Modern Poetry.**—A study of the origin and development of the novel on the basis of *Raleigh*, illustrative readings, lectures on the genius of leading representatives of the various types of fiction, and assigned studies in particular authors, resulting in reports and discussions.

Lectures on the nature and elements of poetry and critical studies of selected short poems from *Milton to Tennyson*. Second term Junior. Required in A. B., Ph. B., and B. S. courses. Two hours weekly.

9. **The Great Orators.**—Lectures on the art of the orator, and critical study of great political and forensic speeches from *Lord Chatham to Gladstone*, with practice in drawing briefs, and reports on assigned reading. Required in B. S. course and elective in A. B. and Ph. B. courses. Third term Junior. Two hours weekly.

10. **Anglo-Saxon and Middle English Literature.**—In connection with the linguistic study in 1, 2, and 3; the life and literary art of the period are exhibited, by illustrative readings; references and lectures. Elective in A. B., Ph. B. and B. S. courses. Junior year. Three hours weekly.

11. **American Literature.**—A series of lectures on *Colonial Literature, Franklin, Irving, Emerson, Lowell, Holmes, Bancroft, Parkman, Prescott, Motley, Bryant, Longfellow,*

Poe, Whittier, Whitman, Brown, Cooper and Hawthorne, together with a study of the times and leading species in a manual, and the discussion of summaries and criticisms upon assigned readings. Elective in all courses. First term Senior. Three hours weekly.

12. **English Literature in the Nineteenth Century.**—An attempt to estimate the spirit of the literary product of the age as a whole. Special attention is given to *Wordsworth, Tennyson*, and *Browning* as representatives. Elective in all courses. Second term Senior. Three hours weekly.

13. **The Philosophy of English Literature.**—A review of the entire history of English literature with the purpose of showing the collective mind which underlies all its phases and gives it unity; the logic and the ethics of its development, the formative influences that generate changes and determine periods, and the relation that literature holds to life. Elective in all courses. Third term Senior. Three hours weekly.

14. **Studies in Literary Criticism**, from *Sidney* to *Pater*. Offered in substitution for course 13 in certain years.

Rhetoric

PROFESSOR HALE AND ASSISTANT PROFESSOR BENNETT.

The work of the Department is based upon the following principles:

1. Criticism of the student's work in composition should be explained in personal conference.
2. Rhetoric, where presented systematically, should be taught as far as may be in constructive fashion.
3. More stress should at first be laid upon Rhetoric as an art.
4. In later years there should be ample opportunity for acquaintance with the real problems of Rhetoric, descriptive, critical and historical.

Prescribed Work

Freshman Year

Narrative Essays read and corrected with the writer. Mr Bennett. 1st term, all courses.

Descriptive Essays. Mr. Bennett. 2d term, all courses.

Constructive Rhetoric. Professor Hale and Mr. Bennett. Three hours, 3d term, all courses.

Sophomore Year

Constructive Rhetoric. Professor Hale. Three hours, 1st term, A. B., Ph. B. and B. S. courses.

Essays and Orations. 2d and 3d terms, all courses. Professor Hale.

Senior and Junior Years

The prescribed work for Junior and Senior years consists of two rhetorical exercises a term for all courses. These exercises will usually be one essay and one oration, although this arrangement may not be strictly held to. One exercise only is prescribed for the 3d term Senior.

Elective Courses

Argumentation. Professor Hale. Two hours. For Juniors.

History of Thought on Rhetoric and Style. Professor Hale. Three hours. For Seniors.

History and Sociology

PROFESSOR RIPTON AND ASSISTANT PROFESSOR JONES.

The work of the department covers three years, beginning with the first term of the Sophomore year. It is designed to give such a general knowledge of History, Economics and Sociology as belongs to a liberal education. At the same time sufficient work is offered in the electives to prepare those students who desire to take up graduate work in these subjects. The instruction is given by text-book, by lectures, and by

library references, the students reporting the results of their reading partly during the regular work of the class, and partly in the form of essays. The subjects covered by the courses are in detail as follows:

1. **English History.** The narrative history of England is taught chiefly, but considerable time is devoted to the Industrial, Commercial and Social history of the country and to the development of the English Constitution. The importance of collateral readings from the English authorities is emphasized. First and second terms Sophomore. Two hours a week. *Required.*

2. **French History.** A preliminary study is made of the different racial elements that entered into the population of the country. The historical period treated of begins with the foundation of the French monarchy. The design in particular is to show the growth of the French nation and the working of the different forces which promoted or retarded French unity. The period studied concludes with the year 1789. The history of France from that date to the present is taken up in greater detail in Course 7. Third term Sophomore. Two hours a week. *Required.*

3. **Middle Ages, Renaissance and Reformation.** The broad outlines of the history of Europe from the beginning of the Christian Era to the Peace of Westphalia, 1648, are considered. Particular attention is given to the great historical events and institutions that mark this period in their relation to cause and result. First, second, and third terms Junior. Two hours a week. *Elective.*

4. **American History.** A study is made of the period of American discovery and exploration and of the colonial period. The main part of the work, however, begins with an examination of the causes of the American Revolution. The course is guided by lectures and the work is done in the library among the authorities. First, second and third terms Junior and Senior. Three hours a week. *Elective.*

5. **New York State History.** This course covers the colonial period under the Dutch and the English and the history of the State to the close of the Civil War. It is based upon lec-

tures and research work in the library among the sources and authorities. A volunteer seminar is held fortnightly for the purpose of giving instruction in the elementary principles of historical research. First, second, and third terms Junior and Senior. One hour a week. *Elective.*

6. **French Revolution and Nineteenth Century.** This course considers the political, social and economic causes and reactionary results of the French Revolution. It then takes up an examination of the events and forces which contributed to the unification of Italy and Germany and concludes with a brief study of the Eastern Question. The course is designed to give a clear understanding of political affairs as they exist in Europe to-day and the historical processes by which they were brought about. First, second and third terms Senior. Three hours a week. *Elective.*

7. **Comparative Politics.** A study is made of the state and national systems of the American Government, together with the general duties and powers of the legislative, executive and judicial branches of the same. A comparative study is then made of the principal governments of Europe, with reference especially to the provisions of their present constitutions and the way in which those constitutions have been developed and may be amended. The course is completed by a study of International Law with reference especially to origin and development. First, second and third terms Senior. Three hours a week. *Elective.*

8. **Economics.** It is the design of this course to give instruction in the leading principles of Economics. While a text-book is used in order to secure more rapid progress, still the views of no school are taught exclusively. By lectures and required collateral reading an attempt is made to present the results of the latest and most approved investigations in the science. The course closes with a series of lectures upon the "History of Political Economy." First term Senior. Three hours a week. *Required in all courses.*

9. **Sociology.** In this course the mutual relations of men in society are examined historically, that the student may learn how present conditions have resulted from past experience. Present social forces and needs are considered with the

purpose of training the students to fulfill the demands of good citizenship. The collateral reading and practical sociological investigation is guided throughout the course by lectures. Second and third terms Senior. Three hours a week. *Required in all except Engineering courses.*

Mental and Moral Philosophy

PROFESSOR HOFFMAN

The course in Philosophy begins with the second term Junior and extends through the entire Senior year. Experimental Psychology and elementary Ethics, the former coming the second and the latter the third term of the Junior year, are required. All the other courses are elective. Instruction in the various studies of the department is usually given by means of lectures, discussions and the use of a text-book.

The course in Experimental Psychology is designed to acquaint the student with the most obvious facts of his mental experience. The chief problems discussed are sensation, localization of functions, memory, conception, the emotions and the will; as far as possible the positions taken up are illustrated and confirmed by actual experiments. The facts of Pathological Psychology are also here briefly considered, especially such abnormal forms of consciousness as aphasia, hypnotism, double personality and insanity.

As Elementary Ethics is a required study, only the outlines of the subject are presented in this course. The history of ethical theories is first briefly reviewed and then the present aspects of the subject is discussed. The relation of Ethics to other sciences is pointed out and much attention is given to the ethical problems involved in such questions as taxation, transportation, corporations, the treatment of criminals, the care of the poor, and the formation and dissolution of the family.

The study of the History of Philosophy begins with the first term Senior year and comes three hours a week for three successive terms. The object of the course is to go over with considerable detail the general field of Philosophy from the earliest times down to our own day and to present for consideration and discussion the views of the great thinkers of the world upon the validity of knowledge, the existence of God, the

nature of virtue, the foundation of the State and other problems of similar import. Much is made of the historical connection of the different systems for the purpose of impressing upon the mind of the student the successive steps that have been taken in the actual development of thought.

Courses in Advanced Psychology and Advanced Ethics are offered to the Seniors during the first and second terms respectively in which the higher problems suggested in the elementary courses receive more extended treatment. A course in the Principles of Science is also among the electives for the first term Senior and may be taken by students in any of the departments of the college.

During the third term Senior the principal studies of this department are: Political and Social Philosophy and the Evolution of Religion. Under this last head the chief ideas of the leading religions of the heathen world are critically examined, their excellences and defects pointed out and a comparison made of them with the special doctrines of the Christian system.

Mathematics

PROF. WRIGHT AND MR. DUNCAN

1. Solid and Spherical Geometry. *Wentworth's Geometry*. Required of Freshmen in the A. B. and Ph. B. courses.

2 a Algebra. *Wells' College Algebra*. *Hall and Knights' Algebra*. Freshman required.

2 b. Algebra. The Theory of Equations, including the elements of Determinants. Open only to those who have taken

5 a. Junior elective.

3 a. Plane and Spherical Trigonometry. *Wentworth*. Freshman required.

3 b. Advanced Trigonometry. *Loney's Trigonometry, Part II*. Junior elective.

4 a. Analytic Geometry. *Tanner and Allen's Analytic Geometry*. Freshman and Sophomore required.

4 b. **Analytic Geometry**, advanced course. *C. Smith's Conic Sections*. Junior and Senior elective. Open only to those who have taken 2 b.

4 c. **Solid Analytic Geometry**. *C. Smith's Solid Geometry*. Junior and Senior elective. Open only to those who have taken 4 b.

5 a. **Differential and Integral Calculus**. *Taylor's Calculus*. Required of Sophomores in the B. S. course. Junior and Senior elective to others.

5 b. **Calculus**, advanced course. *Greenhill*. Senior elective. Open only to those who have taken 4 b and 5 a.

6. **Quaternions**. Senior elective.

7. **Differential Equations**. *Murray*. Senior elective. Open only to those who have taken 5 b.

Candidates for special honors in Mathematics may take courses 4 b, 4 c, 5 b, or 7.

Mechanics and Physics

ASSISTANT PROFESSOR OPDYKE

The general course in Mechanics and Physics extends through three terms. The subjects taken up are, in order, Mechanics, Sound, Heat, Light, Magnetism and Electricity. For illustration of the class-room work, an extensive collection of modern physical apparatus has been obtained. The text-books used are Wright's Mechanics, Gage's principles of Physics and Ames' Theory of Physics.

Elective courses in Heat and Light are offered during Senior year. Also an Elective course in Mathematical Physics during Senior year.

A course in Laboratory Physics is required of students in the B. S. and B. E. courses beginning with the 3d term of Sophomore year, and offered to all Seniors as an elective of two hours a week throughout the year. The phenomena of Mechanics, Sound, Heat, Light and particularly those of Electricity and Magnetism are studied by means of experiments performed

by the students, and the laws which these phenomena involve are established by quantitative measurement. The course is intended as a preparation for further independent work and includes practice in the use of instruments of delicacy and precision. Sabine's Laboratory course in Physical Measurement, Glazebrook and Shaw's Practical Physics and Nichol's Laboratory Manual of Physics are used as text books.

The course for special honors in Physics extends through three terms. The subjects vary from year to year.

The laboratory fee is \$5 per term for the Elective courses.

Chemistry

PROFESSOR PERKINS

In the undergraduate department, Chemistry is taught by lectures and recitations during the Sophomore year.

The Nott Laboratory is open in all branches of Chemistry for special students; especially for students of Agriculture or Medicine, Pharmaceutists, Manufacturing Chemists, Mineralogists, Metallurgists, and students of Medical Jurisprudence.

The course includes instruction in Theoretical and Experimental Chemistry, and systematic Qualitative and Quantitative Analysis, in all their branches and in their application to the arts and manufactures.

Students taking elective courses in the Laboratory are charged a fee of \$10 per term; a deposit of \$10 to cover cost of materials, etc., is required, the amount not used being returned. The fee for the required course in Sanitary Engineering is \$5 per term, and a deposit to cover cost of materials is also required.

For fuller information, address Prof. Maurice Perkins, M. D.

Biology and Geology

PROFESSOR STOLLER

Course I.

Required in the Scientific course, Freshman year. Two recitations and two hours of laboratory work per week throughout the year.

General Biology.—The work begins with the study of protoplasm, cells, tissues and organs, as found in both plants and animals. A number of unicellular organisms are then examined after which a detailed study of the earthworm in respect to general structure, histology, physiology and embryology, is made. 1st term.

Botany.—A fern plant is first carefully studied in regard to structure, physiology and life-history. A series of types is then examined in the laboratory and made the basis for a general study of plant morphology. 2d term.

Plant Life.—The Physiology of plants is now considered: the absorption and assimilation of nutriment, growth, reproduction; the relations of plants to one another and to the outside world. 3d term.

Course II.

Required in the Latin-Scientific course in the Junior year; the third term's work required in the Classical course, Junior year.

General Biology.—A number of selected plant and animal organisms are considered with the purpose of illustrating the more important structural features and physiological processes of living bodies and of affording an understanding of the inductions of biological science. Two hours of recitations and two hours of laboratory work weekly. 1st term.

Animal Biology.—A continuation of the work of the first term but confined to the study of animal types. One hour of recitation and two hours of laboratory work weekly. 2d term.

General Principles of Zoology.—The study and interpretation of the general facts and phenomena of animal life, especially as bearing upon the doctrine of organic evolution. Recitations and lectures, three hours a week. 3d term.

Course III.

Elective in all the courses in the Senior year.

Invertebrate Morphology.—A series of types is studied by microscope and dissection and this work is accompanied by a course of reading in invertebrate zoology. One hour of recitation and four hours of laboratory work weekly. 1st term.

Mammalian Anatomy.—The dissection of the cat with reading in vertebrate anatomy. One hour of recitation per week and eight hours of laboratory work per week on alternate weeks. 2d term.

Vertebrate Zoology. The vertebrate series is studied, especially from the point of view of comparative anatomy. Three recitations or lectures per week. 3d term.

Course IV.

Elective in all the courses in the Senior year.

General Geology.—The work begins with the examination of the more common minerals and rocks. Structural geology is then taken up, the class-room work being supplemented by one or two field excursions. The principles of dynamic geology are then considered. Three hours a week. 1st term.

Historical Geology.—A course in systematic geology and paleontology together with the consideration of the relation of paleontology to organic evolution. Two recitations per week. 2d term.

Field Geology.—Field study of the geologic formations readily accessible from Schenectady and readings from the state geological reports. Three hours a week. 3d term.

Physiology and Physical Education

MR. POLLARD

Human Anatomy, Physiology and Physical Education are required in all courses. Physiology is taken up in the Freshman year and consists of recitations illustrated by dissections from some of the lower animals. A thorough study of the human body is made, so that the student is more able to understand the benefits resulting from systematic bodily exercise.

The course in the gymnasium is so arranged as to give a practical knowledge of the different apparatus pertaining to physical training. Commencing with light work, consisting of free gymnastics, club, dumb-bell and wand exercises, the course leads through a graded series, involving heavier work as the student becomes fitted for it.

After the study of physiology, and gymnasium work of the previous year, the student is prepared for the study of Physiology of Exercise, in which course the results of exercise, as to its effects on the body, are taken up and discussed from a physiological standpoint.

It is the aim of the department to give the student such a training in the methods of Physical Education that he may have a comprehensive knowledge of the subject, and to secure health, vigor and such harmonious development of the body as will fit it to resist disease, and prepare it for efficient service, both now and later in life.

A thorough physical examination of each student is made in the fall, and the measurements are outlined on charts, so as to show the parts below the normal development, for which special exercises suited to the health and physical condition of each individual are prescribed. In the spring measurements are taken again and the improvement noted.

In connection with the college is a large gymnasium well equipped with new apparatus and thoroughly adapted to the purpose of providing excellent opportunities for physical training. It is open from 7 A. M. to 6 P. M. during the college year, to all classes for voluntary work. All kinds of athletic sports are encouraged, as much as possible, under the advice and guidance of the department.

Lectures

It is the policy of the College to provide its students with the advantages of frequent lectures by specialists in the various departments of knowledge.

In addition to these Prof. William Wells, LL.D., delivers each year a course of lectures on current history. The range and importance of these lectures are indicated by the following list of subjects: "Cuba, Mexico and Central America," "German Universities and German Politics," "The Pacific Slope and its History," "Modern France," "Alaska and the Yellowstone Park," "Greece and Turkey," "Egypt and the Nile," "Northern Africa and Moorish Spain," "The Scandinavian Norseland," "All the Russias," "The Story of the Canadas," "The Schools and Scholars of the Germany of To-day," "Idiomatic Analogies of the Principal European Tongues," "Our West Indian Acquisitions,"

THE LIBRARY

PETER NELSON, ACTING LIBRARIAN

The library is open every week-day from 8 A. M. to 12:30 P. M., from 2 P. M. to 6 P. M., and from 7 P. M. to 9 P. M. It occupies the building erected for it by the widow of the late F. H. Powers, of Philadelphia. Among its special attractions are the excellent engineering and scientific library of the late Prof. Gillespie, and the collection of mathematical works made by the late John Patterson, of Albany. The income from a bequest of five thousand dollars left by the late Lemon Thomson, Esq., of Albany, is devoted to the purchase of books on American subjects, especially history and political science. An entire alcove, known as the "Thomson Alcove," is reserved for these books.

The system of shelving is such that each student may inspect the books for himself. The librarian and his assistants are always ready to aid the student in his study and investigation, and to furnish him needed information regarding the direct personal use of indexes, catalogues and other library tools.

In the periodical reading room of the library will be found the current issues of about ninety of the most important magazines, reviews, periodicals and newspapers, both American and foreign, as well as the transactions of a number of the learned societies and organizations.

Any student is allowed to withdraw books from the library upon making a deposit of five dollars which can be taken up at any time.

THE NATURAL HISTORY MUSEUMS

DR. STOLLER, CURATOR

Biological Museum

In Zoölogy, the local fauna is represented by a considerable collection of mounted birds, by a number of skulls, skeletons and mounted specimens of mammals, and by alcoholic specimens of reptiles and fishes. In the department of invertebrates the collections of marine animals made by Dr. Harrison E. Webster are extensive, including sponges, corals, worms, crustacea and molluscs, the total number of specimens being over 5,000. The Wheatley collection of shells presented by E. C. Delavan, Esq., consists of 8,000 specimens.

The Botanical collections mostly brought together by the efforts of Prof. Jonathan Pearson, are of no small value. The local collection represents Prof. Pearson's personal work. It has been supplemented recently by the addition of a complete set of ferns and the fern allies of Schenectady county. The flora of the United States is further represented by collections from Virginia, the Red River region of the southwest and those made by Dr. Nevins in Alabama. The lower cryptogams are represented by an extremely valuable collection of 2300 specimens of fungi, the gift of Mr. J. B. Ellis, who is the leading fungologist of America.

A very considerable portion of the Herbarium, however, consists of foreign plants, including representative collections from Germany, Spain, Asia Minor and England with not a few specimens from Iceland, Norway, France and Switzerland. They have been sorted and distributed in a single series following the latest accepted sequence, that of Engler and Prantl's

Naturliche Pflanzenfamilien," making the entire collection of some 8,000 or 10,000 specimens readily accessible for reference and study.

Geological Museum

In Mineralogy, the Wheatley collection of minerals donated by E. C. Delavan, Esq., which is labeled according to the system of Dana, contains 4000 specimens, many of which represent the more valuable forms.

In Geology, a general collection of rocks and minerals, comprising some 3000 specimens; and a considerable collection of Paleozoic and Mesozoic fossils. During the past few years the material in the museum has been largely increased by extensive collecting in the Silurian and Devonian systems of New York.

The collections may be grouped under the three following heads:

I. A collection of rocks and minerals in part donated by the U. S. National Museum.

II. A collection of rocks and fossils from the Carboniferous, Permian and Cretaceous systems of the United States, deposited by the United States and Kansas Geological Surveys, which contains the type material described in the classification of the American Permian.

III. Rocks and fossils from the New York formations, principally from the Lower and Upper Silurian and Devonian systems.

The collections made by the geological department during the last three years have so increased the museum that there is plenty of material now available for the careful study of the Paleozoic and Mesozoic geology of the United States. A systematic collection of the Paleozoic rocks and fossils, principally from the New York formations, has been arranged in the north gallery of the museum.

ORDER AND PROPORTION
OF STUDIES
FOR THE YEAR 1899-1900

A. B. Course

FRESHMAN YEAR

First Term

Hours per week.

- 4 Greek.
- 4 Latin.
- 4 Solid Geometry.
- 3 French.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.
- Greek Prose Composition.
- Latin Prose Composition.

Second Term

- 4 Greek.
- 4 Latin.
- 4 Algebra.
- 3 French.
- 2 Physiology.
- 1 Gymnastics.
- Descriptive Essays.
- Greek Prose Composition.
- Latin Prose Composition.

Third Term

- 4 Greek.
- 4 Latin.
- 3 French.
- 3 Rhetoric.
- 3 Trigonometry.
- 1 Gymnastics.
- Greek Prose Composition.
- Latin Prose Composition.

A. B. Course**SOPHOMORE YEAR**

First Term

Hours per week.

- 3 Greek.
- 3 Latin.
- 3 Rhetoric.
- 3 Analytic Geometry.
- 3 German.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 Greek.
- 3 Latin.
- 3 German.
- 3 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

Third Term

- 3 Greek.
- 3 Latin.
- 3 German.
- 2 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

A. B. Course

JUNIOR YEAR

First Term

Hours per week.

- 4 Mechanics.
- 3 German.
- 3 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Second Term

- 3 Psychology.
- 3 Physics.
- 2 German.
- 2 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Third Term

- 3 Biology.
- 3 Physics.
- 3 Ethics.
- 1 Rhetoric.
- 7 Elective.*

*For list of Electives, see page 77.

A. B. Course**SENIOR YEAR**

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

*For list of Electives, see page 78.

Ph. B. Course

FRESHMAN YEAR

First Term

Hours per week.

- 4 Latin.
- 4 Solid Geometry.
- 3 German.
- 3 French.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.
- Latin Prose Composition.

Second Term

- 4 Latin.
- 4 Algebra.
- 3 German.
- 3 French.
- 2 Physiology.
- 1 Gymnastics.
- Descriptive Essays.
- Latin Prose Composition.

Third Term

- 4 Latin.
- 3 Rhetoric.
- 3 Trigonometry.
- 3 German.
- 3 French.
- 1 Gymnastics.

SOPHOMORE YEAR**First Term**

Hours per week.

- 3 Latin.
- 3 Rhetoric.
- 3 Analytic Geometry.
- 3 German or French.
- 3 Chemistry.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 Latin.
- 3 German or French.
- 3 English Literature.
- 3 Chemistry.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

Third Term

- 3 Latin.
- 4 Chemistry.
- 3 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

Ph. B. Course

JUNIOR YEAR

First Term

Hours per week.

- 3 Biology.
- 3 English Literature.
- 4 Mechanics.
- 1 Rhetoric.
- 7 Elective.*

Second Term

- 2 Biology.
- 3 Physics.
- 3 Psychology.
- 2 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Third Term

- 3 Physics.
- 3 Biology.
- 4 Ethics.
- 1 Rhetoric.
- 7 Elective.*

*For list of Electives, see page 77.

Ph. B. Course**SENIOR YEAR.**

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

*For list of Electives, see page 78.

B. S. Course

FRESHMAN YEAR

First Term

Hours per week.

- 3 French.
- 5 Algebra.
- 3 German.
- 3 Biology.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.

Second Term

- 3 French.
- 4 Trigonometry and Analytic Geometry.
- 3 German.
- 3 Biology.
- 2 Physiology.
- 1 Gymnastics.
- Descriptive Essays.

Third Term

- 3 French.
- 3 Rhetoric.
- 4 Analytic Geometry.
- 3 German.
- 3 Biology.
- 1 Gymnastics.

B. S. Course**SOPHOMORE YEAR**

First Term

Hours per week.

- 3 German or French.
- 3 Rhetoric.
- 5 Calculus.
- 3 Chemistry.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 English Literature.
- 5 Mechanics.
- 2 Logic.
- 3 Chemistry.
- 2 History.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

Third Term

- 2 English Literature.
- 5 Physics and Physical Laboratory.
- 3 Chemistry.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

B. S. Course

JUNIOR YEAR

First Term

Hours per week.

- 3 English Literature.
- 5 Physics and Physical Laboratory.
- 1 Rhetoric.
- 8 Elective.*

Second Term

- 3 Psychology.
- 2 English Literature.
- 3 Astronomy.
- 1 Rhetoric.
- 8 Elective.*

Third Term

- 3 Ethics.
- 3 Biology.
- 2 English Literature.
- 1 Rhetoric.
- 8 Elective.*

*For list of Electives, see page 77.

B. S. Course

SENIOR YEAR

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

*For list of Electives, see page 78.

General List of Electives

[For limiting conditions, see statements of respective departments.]

JUNIOR YEAR

First Term

Hours per week.

- 2 Greek.
- 2 Latin—Plautus.
- 3 Anglo-Saxon.
- 3 German.
- 3 French.
- 2 Theory of Equations, or Calculus.
- 3 American History.
- 2 European History.
- 3 Advanced Rhetoric,—Argumentation.
- 3 Chemistry. (For A. B. Course.)
- 3 Chemical Laboratory.

Second Term

- 2 Greek.
- 2 Latin,—Juvenal.
- 3 Anglo-Saxon and Early Middle English.
- 3 German.
- 3 French.
- 2 Advanced Trigonometry, or Calculus.
- 3 American History.
- 2 European History.
- 3 Advanced Rhetoric,—Argumentation.
- 3 Chemistry. (For A. B. Course.)
- 3 Chemical Laboratory.

Third Term

- 2 Greek.
- 2 Latin,—Lectures, Private Life of Greeks and Romans.
- 3 English Philology.
- 3 German.
- 3 French.

- 2 Advanced Analytic Geometry, or Calculus.
 - 3 American History.
 - 2 European History.
 - 3 Advanced Rhetoric,—Argumentation.
 - 3 Chemistry. (For A. B. course.)
 - 3 Chemical Laboratory.
-

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

First Term

Hours per week.

- 2 Greek.
- 2 Latin,—Lucretius.
- 3 Spanish.
- 3 American Literature, or Studies in English
Literary Criticism.
- 3 History of Thought on Rhetoric and Style.
- 2 Solid Analytic Geometry, or Advanced
Calculus.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 3 General Geology.
- 3 Comparative Politics.
- 3 European History.
- 3 History of Philosophy.
- 3 Advanced Psychology.
- 3 Invertebrate Morphology.

Union College

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

Second Term

Hours per week.

- 2 Greek.
- 2 Latin,—Lectures, Monuments of Athens and Rome.
- 3 Spanish.
- 3 English Literature in the 19th Century, or Studies in
English Literary Criticism.
- 3 History of Thought on Rhetoric and Style.
- 2 Quaternions.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 2 Scientific Evidences of Evolution.
- 3 Vertebrate Anatomy.
- 3 Comparative Politics.
- 3 European History.
- 3 History of Philosophy.
- 3 Advanced Ethics.

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

Third Term

Hours per week.

- 2 Greek.
- 2 Latin,—Teachers' Course, or Introductory Course in Epigraphy.
- 3 Spanish.
- 3 Studies in English Literary Criticism, or the Philosophy of English Literature.
- 3 History of Thought on Rhetoric and Style.
- 2 Differential Equations.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 2 Theories of Evolution.
- 3 European History.
- 3 International Law.
- 3 Evolution of Religion.
- 3 History of Philosophy.
- 3 Comparative Vertebrate Anatomy.

FOR
CURRICULUM
OF THE
B. E. COURSES

See pages 120 to 125

GENERAL REGULATIONS

Registration.—Every student must report at the Registrar's office at the beginning of each term and register college or local residence. Any change of residence during the term must be reported at once.

Residence.—Students are not allowed to change their college rooms during the term without permission of the President or Dean; for every change the sum of two dollars is added to the term-bill. Students must conform to college rules regarding keys.

Reports.—A daily record of attendance at class and chapel and of scholarship is kept, and is transmitted at the close of each term, or more frequently, to the student's parent or guardian.

Standing.—There are four grades of scholarship:—from 9 to 10 inclusive, first grade; from 8 to 8.9, second grade; from 7 to 7.9, third grade; from 6 to 6.9, fourth grade. Any mark below six indicates failure, or, in the mathematical studies of the Engineering courses, any mark below seven.

Those receiving the three highest marks for the whole course in the Engineering Department and the seven highest marks in the other departments are entitled to appointment as Commencement Orators.

Absences in General.—Absences are recorded as of three kinds; permitted, excused and unexcused. No one but the President or the Dean can authorize the record of an absence as permitted.

Absences are entered (in every course) against a student from the beginning of a term until he reports his return to the Registrar. A like report is required after absence because of sickness or permission.

Class-Room Absences.—Students will be allowed, each term, as many absences without excuse, in any subject, as there are recitations per week in that subject.

After this limit has been reached, each additional unexcused absence will be marked as a failure in recitation, and one or more excused absences will subject the student to a special preliminary examination before he can proceed to his regular examination.

After a number of unexcused absences equal to three weeks of recitations in any subject, the student will not be allowed to continue his work in that subject, but must take it with the succeeding class.

No excuse will be granted except for protracted illness, or for reasons in every way exceptional.

This rule does not apply to examinations, or to recitations just before or after any vacation or recess, or to any class as a whole at any time, and is not to be interpreted as remitting any part of the total work of the term.

Chapel Absences.—Ten absences without excuse will be allowed each term. All absences after the first ten lower the standing at the rate of one unit for every two absences.

No absences will be excused except for protracted illness or for reasons in every way exceptional.

In the determination of a student's general standing, marks for chapel attendance are counted as the equivalent of a one hour per week recitation. They affect the granting of scholarships and the selection of honor men.

Conditions.—No student who has any conditions unsatisfied at the close of the first condition examination of the college year will be permitted to continue with his class without the express authorization of the Faculty. Conditions not removed by the end of the second examination held after their imposition, must be made up in class at the first opportunity, and this work shall take precedence of the regular work in case of conflict in the schedule. No Senior who has failed to make up all his back work by the end of the second term of Senior year can be recommended for a degree, except by special vote of the Faculty.

Examinations for the removal of conditions occur on the first Saturday of the Fall term, and on the first Saturday in December, March and June, as indicated in the College calendar.

Students who have been excused from any term examination may be examined later at the option of the instructor, but such examination cannot be postponed beyond the first condition examination. A failure to pass will be regarded as a failure at the original term examination.

A failure to report at any appointed examination will be regarded as a trial unless previously excused.

Irregular Students.—Irregular students have no class relation, or class privilege; they are debarred from competition for prizes and from the attainment of special honors.

Changes of Course.—Students are not permitted to pass from one course to another, or to take any studies out of their regular order, without the specific authorization of the Faculty.

The evidence that a student's continuance in college is resulting in no advantage to himself, or in harm to others, will occasion his separation from the institution.

EXPENSES

Matriculation fee.....	\$ 5 00
Tuition, per term.....	25 00
Room rent, per term.....	6 00
For room occupied by one student.....	12 00
Chemical laboratory fees:	
Elective courses, per term.....	10 00
Required course in Sanitary Engineering, per term,	5 00
Electrical engineering laboratory fee, per term.....	5 00
Biological laboratory fees:	
Elective courses, per term.....	5 00
Required courses, per term.....	2 00
Geological laboratory fee, per term.....	2 00
Physical laboratory fees:	
Elective courses, per term.....	5 00
Required courses, per term.....	2 00
Deposits to secure cost of material, etc.:	
Chemical laboratory	10 00
Biological laboratory, elective course.....	5 00
Graduation fee.....	8 00
Diploma fee.....	4 50

Students who take part of their senior year's work at the Albany Medical College, as provided on page 34, are charged 125 for the year's tuition, \$50 to be paid to the Treasurer of Union College, and \$75 to the Treasurer of the Albany Medical College.

All bills are to be paid within two weeks from the beginning of the term. No deduction is made from the usual charges on account of absence from college.

The Faculty are not allowed to sign any degree, certificate or dismissal for any student until his bills are paid or secured.

Board can be procured for \$3 to \$4 a week. The total expense of tuition, room, text-books, board, lights, washing, etc., during the three terms, is about \$280.

SCHOLARSHIPS

Funds given especially for this purpose enable the College to offer aid to a number of students each year as follows.

Tuition Scholarships

These cover charges for tuition (seventy-five dollars per year, room-rent not included) available for students in all courses, two-thirds of the whole number being open to applicants in the Classical and Latin Scientific courses, and one-third to applicants in the Scientific and Engineering courses. These scholarships are awarded in the order of application.

Prize Scholarships

Ten of these are offered to students in each class, in the Classical and Latin Scientific courses only, and are awarded after a competitive examination *covering the entrance requirements*.

These scholarships are for the following amounts including tuition: One for \$200, two for \$150, three for \$135, and four for \$120, and are awarded to competitors in the order of excellence. The examination will be held at the College at the regular time for the entrance examination in September each year. Any student who has been awarded a Tuition Scholarship is privileged to compete for a Prize Scholarship and, if successful, relinquishes the Tuition Scholarship for the Prize Scholarship. All registrations for the competitive examinations must be made on or before September 1st each year by filling out a blank which will be furnished on application and sending it to the Dean.

Conditions

Tuition Scholarships.—An applicant for a Tuition Scholarship must declare his purpose to remain in Union College until he has taken his degree and must furnish at least two certificates from reputable citizens not members of his own family stating their knowledge of his financial need as well as of his

good character and studious habits. The scholarship will be forfeited upon the failure of the student to maintain an average grade of 80 per cent. in his studies or upon sufficient evidence of moral delinquency.

Prize Scholarships.—These are open to all students irrespective of financial need, and will be forfeited upon failure to maintain a grade of 85 per cent. or upon sufficient evidence of moral delinquency.

Application blanks will be provided by the President or Dean upon request.

The aid extended to *any* student will be withdrawn upon his failure to maintain an average grade of 80 per cent. in his studies, or upon sufficient evidence of moral delinquency.

John David Wolfe Memorial Scholarships

The income of a Fund of Fifty Thousand Dollars established by the generosity of Miss Catharine Lorillard Wolfe, is designed to aid students from the Southern States.

Levi Parsons Scholarships

A generous benefaction of Sixty Thousand Dollars by the Hon. Levi Parsons, maintains:

Twelve scholarships yielding about one hundred and fifty dollars a year, each; this provides for tuition, room-rent and a money payment of \$20 per term.

Among applicants, preference is given

1st, to blood relatives of the Founder, bearing his name and living in the county of Fulton, Montgomery or Hamilton, in the State of New York, and especially to those bearing his name and living in Gloversville or Johnstown, Fulton county.

2d, to applicants living in the following places according to the following order:

1. The city of Gloversville, Fulton Co.
2. The city of Johnstown.
3. The township of Johnstown.

4. The county of Fulton.
5. The adjoining counties of Montgomery and Hamilton.
6. To blood relatives living in any other part of the United States.

Nomination to scholarships is made by the Board of Directors of the Gloversville Free Library; and the nominees must pass satisfactory examinations at the College. Applications are received by the Directors of the Gloversville Free Library Gloversville, N. Y. Students must maintain a grade of 80 as above.

Union School Scholarships

These scholarships are limited to pupils of the Union School in Schenectady, who are sons or wards of residents. They must bring from the Principal a certificate of preparation for college and also one of abstinence, during the course, from tobacco and spirituous liquors, and they must sign a like pledge for their college course. They receive a remission of \$15 on the term-bill, on condition of maintaining a grade of 80 and observing their pledge.

PRIZES

Blatchford Oratorical Medals

The Hon. Richard M. Blatchford, LL. D., of New York city, founded oratorical prizes, consisting of two gold medals of the value of the interest on \$1,000, which are given to the two members of the graduating class who deliver at Commencement the best orations; "regard being had alike to their elevated and classical character and to their graceful and effective delivery." These medals are awarded by a committee appointed by the Trustees and are presented at the close of the exercises.

Warner Prize

The Hon. Horatio G. Warner, LL. D., of Rochester, N. Y., founded an annual prize consisting of silver plate of the value of \$45 to be presented at Commencement to the "graduate of Union College, Classical course, who shall reach the highest standing in the performance of collegiate duties, and also sustain the best character for moral rectitude and deportment, without regard to religious practice or profession." The prize is awarded by the Faculty.

Ingham Prize

The Hon. Albert C. Ingham, LL. D., of Meridian, N. Y., founded an annual prize of the interest on \$1,000 (in the form of plate or medal or money, or both medal and money, as preferred), to be awarded at Commencement to that Senior connected with the College for not less than two years who shall offer the best essay on one of two assigned subjects in English Literature or History.

The essay must be type-written and must contain not less than 4,000 nor more than 4,500 words. Its signature (fictitious) and the writer's real name must be enclosed in a sealed envelope; the signature and the name of the prize being given on

the outside. The essay with the note must be presented by noon on the first day of June.

Allen Essay Prizes

The Hon. Wm. F. Allen, LL. D., of Oswego, N. Y., established prizes for the best three essays on any subject, submitted by members of the Senior class. They are respectively, \$20, \$15 and \$10, and are presented at Commencement.

The essay must be type-written and must contain not less than 2,500 nor more than 3,000 words, and must be signed and presented (with note as in the case of the Ingham Essay) by noon on June 1st.

Prize for Extemporaneous Speaking

A prize of \$50 in money is awarded to that member of the College who shall deliver the best extemporaneous speech at a public competition to be held in Commencement week in each year. The award is made by a committee appointed by the donor, and is based on the following considerations: (1) The appropriateness and correctness of the subject matter; (2) the logical force of the argument; (3) the excellence of the style; (4) the grace and effectiveness of the delivery. All students in regular standing are eligible. The number of competitors is, however, limited to ten.

Clark Prizes

Prizes consisting of books are awarded at Commencement to the two members of the Junior class who offer the best essays on assigned subjects in English Literature.

The essay must be type-written and must contain not less than 2,500 nor more than 3,000 words, and must be signed and presented (with note, as in the case of the Ingham and the Allen Essays) by noon on June 1st.

Oratorical Prizes

Are presented at Commencement to the two Juniors and the two Sophomores who deliver the orations best in composition and delivery, on the occasion of Prize Speaking in Commencement week. Four Juniors and four Sophomores are selected

for this competition by a Committee of the Faculty, on the first Saturday in May. Candidates must be in full standing on appearance before the Committee.

Allison-Foote Prize

Founded by Geo. F. Allison, of New York city, and Wallace T. Foote, of Port Henry, N. Y., for the encouragement of debate in the Literary Societies. The prize consists of \$100 in cash, and is to be awarded as the result of a public competition between representatives of the Adelpic and Philomathean Literary Societies. \$50 will be awarded to the society presenting as a whole the strongest argument. The remaining \$50 will be awarded to the debater who makes the best single speech, regardless of his society relations. Contestants must have engaged in at least ten debates in their respective societies during the college year immediately preceding. All further details are to be left to the determination of a committee consisting of the President and the Dean of the College, and the Professor of Rhetoric.

John K. Porter Memorial Scholarships

A fund given by Mrs. John K. Porter, in memory of her husband, is designed to assist students who, after graduating from college, pursue the study of law. The fund provides, at present, for three Scholarships of ninety dollars each. The awards will be made at Commencement to Seniors chosen by the Faculty.

Gilbert M. Spier Memorial Scholarship

A fund given by Mrs. Glover C. Arnold, in memory of her father, the late Judge Gilbert M. Spier, provides another Scholarship for students of law who go from Union College to the Albany Law School, another department of Union University.

The sum of ninety dollars will be awarded at Commencement to the Senior chosen by the Faculty, the choice being made on the basis of excellence in historical studies.

Applicants for Law School scholarships must register at the College office by May 1st of Senior year.

DEGREES AND HONORS

Degrees

The degrees of the college are conferred in harmony with a resolution of the Board of Trustees, which says: "The successful completion of the Classical course [Course 1, page 33] shall entitle the student to the degree of Bachelor of Arts; of the Latin-Scientific course [Course 2, page 33] to the degree of Bachelor of Philosophy; of the Scientific course [Course 3, page 33] to the degree of Bachelor of Science; of one of the Engineering courses [Courses 4, 5, 6, pages 33 and 34] to the degree of Bachelor of Engineering." The candidate for a degree must have entered college before the close of the first Senior term, must have paid all dues to the College Treasurer, and returned all books borrowed from the Library. He must also attend the conferring of Degrees, or be expressly excused therefrom.

Honors

All Commencement prizes are limited to A. B., B. S., or Ph. B. students who have entered at or before the beginning of the Senior year, and who are in full standing at the close of the second term; and to Engineering students entered likewise and in full standing at the close of the second term, in both the Engineering course and the English department of the B. S. or Ph. B. course.

Commencement Appointments

These honors are assigned to ten Seniors on the basis of scholarship, as stated under Standing, page 83. Provisional appointments are made at the close of the second term Senior, and become final if those who receive them retain the same relative rank to the end of their course. Under present regulations, no other persons can become competitors for the Blatchford Oratorical Medals.

Seniors not in full standing at the close of the second term, shall be considered ineligible to a Commencement appointment.

Places gained as the result of the third term's work, shall be on the excused list, unless ordered otherwise by special vote of the Faculty.

The Valedictory

This honor is awarded to the Senior of highest standing among the ten receiving Commencement appointments.

Special Honors

Special Honors are also given at graduation in each of the following departments: Greek, Latin, English, Modern Languages, Mathematics, Physics, Chemistry, Biology, Geology and Paleontology, Economics, History, Sociology, Mental and Moral Philosophy. The work required in each case will be the equivalent of three terms of class-room work of two hours per week each, and will be outside of the prescribed or elective courses. The candidate for Special Honors must apply to the office of the department in which he proposes to take Honors, not later than the first Monday of the Spring term of the Junior year. He must attain in all the studies of the department in which he tries for Honors, a rank of not less than ninety per cent. of the maximum. The evidence that he has successfully completed the extra course prescribed for him must be submitted, not later than June first of the Senior year, to the Faculty, who shall decide in each case whether the work done is worthy of an Honor. The Honors attained are stated in the diploma, and the names of the students who take Honors are printed on the Commencement programme.

DEGREES CONFERRED

AT THE
ONE HUNDRED AND SECOND ANNUAL
COMMENCEMENT

June 28, 1899

HONORARY

LL. D.

HAMILTON W. MABIE..... New York City.
SIDNEY A. NORTON..... Columbus, Ohio.

D. D.

GEORGE ROBINSON..... Ft. Leavenworth, Kans.
WILLIAM FORCE WHITAKER..... Albany, N. Y.

L. H. D.

IRA N. HOLLIS..... Cambridge, Mass.

A. B.

ROBERT E. A. DORR..... New York City.
JAMES W. LESTER..... Saratoga Springs, N. Y.

IN COURSE

A. B.

DANIEL S. LAMONT..... Class of '72.

B. S.

GEORGE A. HOLCOMBE..... Class of '98.

A. M.

HERVEY DE WITT GRISWOLD..... Class of '85.
HENRY WARD BRIGGS..... Class of '91.

ARTHUR ELIJAH BARNES.....	Class of '95.
JOHN N. V. VEDDER.....	" '95.
GEORGE JOSEPH DANN.....	" '96.
ROSCOE GUERNSEY.....	" '96.
ALBERT BENSEN VAN VRANKEN.....	" '96.
ARTHUR BURDETTE VOSSLER.....	" '96.

M. S.

ALVA LAWRENCE PECKHAM.....	Class of '96.
WALTER L. TERRY.....	" '96.

CLASS OF 1899

A. B.

CHARLES C. BALLARD.....	Schenectady.
LEROY T. BRADFORD.....	Broadalbin.
WILLIAM BARTON DAVIS.....	Schenectady.
SNYDER GAGE.....	Johnstown.
OLIN C. HOTCHKISS.....	Potter.
DANIEL JAMES HOYT.....	Amsterdam.
IRVING W. KETCHUM.....	Schenectady.
MORGAN SHERIDAN POST.....	Schenectady.
JOHN EVERETT SAWYER.....	Sandy Hill.
FERDINAND SCHMITTER.....	Albany.
EDWARD WINSLOW STRONG.....	Schenectady.
JAMES NEWELL VANDER VEER.....	Albany.
GEORGE MARTIN WILEY, JR.....	West Hebron.
HARRISON K. WRIGHT.....	Pulaski.

Ph. B.

WILLIAM F. H. BREEZE.....	Auburn.
F. ROY CHAMPION.....	Schenectady.
ROBERT MILO EAMES.....	Albany.
ROBERT CALVIN GAMBEE.....	MacDougall.
FREDERICK LINCOLN GREENE.....	Albany.
STILLMAN S. HAM.....	Schenectady.

HAROLD J. HINMAN.....	Albany.
JOSEPH MARK.....	Amsterdam.
DIX WEBSTER NOEL.....	Chicago, Ill.
GEORGE C. ROWELL.....	Ogdensburgh.
CLAYTON A. SNYDER.....	Middleburgh.
FRANK T. WRIGHT.....	Schenectady.

B. S.

FLOY J. BONESTEEL.....	Kingston.
LLOYD D. BRAY.....	Kingston.
ALBERT O. CASEY.....	Auburn.
FRANK H. FISK, JR.....	Albany.
WILFORD T. PURCHASE.....	Newark.
JOHN L. SHERWOOD.....	Ballston Springs.
WILLIAM JOSEPH SMITH.....	Waterford.

B. E.

HAVILAH BEARDSLEY.....	Kalamazoo, Mich.
GEORGE ANDREW DORAN.....	Amsterdam.
GEORGE CLARKE FOOTE.....	Port Henry.
J. IRVING GAYETTY.....	Baldwinsville.
EDMUND LEC. HEGEMAN.....	Plainfield, N. J.
ANTHONY JAMES HORNSBY.....	Palmyra.
BURTON E. HUGGINS.....	Salamanca.
ROBERT MARSHALL HUNTLEY.....	Amsterdam.
STEPHEN CLARK MEDBERY.....	Ballston Springs.
MORTON MOORE PRICE.....	Schenectady.
FREDERICK H. WESTON, Jr.....	Schenectady.

AWARDS

Valedictory

EDWARD WINSLOW STRONG..... Schenectady.

Commencement Orations

CHARLES CLEAR BALLARD..... Schenectady.

SNYDER GAGE..... Johnstown.

HAROLD J. HINMAN..... Albany.

IRVING W. KETCHUM..... Schenectady.

CLAYTON A. SNYDER..... Middleburgh.

HARRISON K. WRIGHT..... Pulaski.

Engineering Theses

EDMUND LEC. HEGEMAN..... Plainfield, N. J.

MORTON MOORE PRICE..... Schenectady.

FREDERICK H. WESTON, JR..... Schenectady.

Special Honors

In Chemistry..... FERDINAND SCHMITTER

In English..... HARRISON K. WRIGHT.

In Greek..... EDWARD W. STRONG.

In History..... OLIN C. HOTCHKISS.

In Latin..... { WILLIAM B. DAVIS.
JOHN E. SAWYER.
EDWARD W. STRONG.

In Philosophy..... { WILLIAM B. DAVIS.
IRVING W. KETCHUM.

Honorable Mention in Engineering..... { E. LEC. HEGEMAN.
ANTHONY J. HORNSBY.

Warner Prize,

for Seniors

EDWARD WINSLOW STRONG

Blatchford Oratorical Medals

for Seniors

1st. HAROLD J. HINMAN

2d. EDWARD WINSLOW STRONG

Honorable Mention:

IRVING W. KETCHUM

Ingham Prize

for Seniors

HARRISON K. WRIGHT

Prize for Extemporaneous Speaking

W. DEWEY LOUCKS

Class of 1900

Honorable Mention:

HARRISON K. WRIGHT

Allen Essay Prizes

for Seniors

1st. IRVING W. KETCHUM

2d. HARRISON K. WRIGHT

3d. WILLIAM B. DAVIS

Junior Oratorical Prizes

1st. CLAYTON J. POTTER

2d. EMIL L. WINTERBERG

Sophomore Oratorical Prizes

1st. JOHN McNAB

2d. ROBERT A. BOWDEN

*Union College***Clark Prizes**

for Juniors

1st. MELVIN T. BENDER

2nd. LESLIE N. BROUGHTON

Honorable Mention:

LESTER T. HUBBARD

Allison-Foote PrizesWon by the Adelphic Society
and

IRVING W. KETCHUM

Class of 1899

**Prize offered by the National Society of the Sons of the
American Revolution,**for the best essay on "The Principles Fought for in the War of
the American Revolution"

LESTER T. HUBBARD

Class of 1900

John K. Porter Memorial Scholarships

F. ROY CHAMPION

WILLIAM B. DAVIS

DIX W. NOEL

Gilbert M. Spier Memorial Scholarship

HAROLD J. HINMAN

Phi Beta Kappa

from the Senior Class

CHARLES C. BALLARD

SNYDER GAGE

IRVING W. KETCHUM

EDWARD W. STRONG

HARRISON K. WRIGHT

SCHOOL OF CIVIL ENGINEERING

UNION COLLEGE

SCHENECTADY, N. Y.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature.

MAURICE PERKINS, A. M., M. D.,
Professor of Chemistry.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

JAMES REAGLES TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS WALLACE WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK SARGENT HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

BENJAMIN H. RIPTON, PH. D., LL. D., Dean,
Professor of History and Sociology.

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

ALBERT H. PEPPER, A. M.,
Assistant Professor of Modern Languages.

ELTON B. WALKER, B. S.,
Assistant Professor of Civil Engineering.

HOWARD OPDYKE, A. B.,
Assistant Professor of Physics.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

JOHN W. H. POLLARD, B. L.,
Instructor in Physical Culture.

HORACE T. EDDY, B. E. E., E. E.,
Instructor in Electrical Engineering.

JOHN L. MARCH, A. M.,
Instructor in Modern Languages.

LINDSAY DUNCAN, B. S.,
Instructor in Mathematics, Drafting and Surveying.

SCHOOL OF CIVIL ENGINEERING

This school was founded in 1845. Its object is to give its students such instruction in the theory and practice of Civil Engineering as will qualify them for immediate usefulness in the field and office in a subordinate capacity, and at the same time fit them to fill satisfactorily the higher positions in the profession, after a moderate amount of experience in the routine of practice. The course of instruction aims to effect this by constant exercise in mechanical draughting, instrumental field-work and numerical calculations, combined with lectures and the study of the text-books.

The connection of the Engineering School with the College affords its students peculiar advantages for study in the various departments of the latter, to all of which they are admitted without extra charge.

The location of Schenectady is most favorable for an Engineering School. The city is on the Mohawk river and is intersected by several railroads and the Erie Canal. These present many bridges and other works interesting to the Engineering student. There are also extensive Locomotive Works, Electrical Works, Machine Shops and Foundries, all of which afford special advantages for examination and study.

For information regarding requirements for admission, expenses, and terms and vacations, see pages 35-42, 86 and 5, 6.

Degrees. — Three courses in Engineering are offered, viz.: A general Civil Engineering course, which is intended to give the basis of an Engineering education, including the fundamental principles of all special branches of the profession, a knowledge of both French and German, and a course in English; a special course in Sanitary Engineering which differs from the general course in substituting special work in Sanitary Engineering for some of the general Engineering studies; and a course in Electrical Engineering. The Degree

of Bachelor of Engineering is given for the successful completion of any one of these courses. These three courses are alike during the first three years but widely different during the Senior year.

This permits a student to defer the selection of his particular course until a year or two of study has made him somewhat familiar with the characteristics of the several courses and with his own preference and capacity. A Graduate Course of one year is offered to graduates of any of the three courses, the successful completion of which will entitle the student to the Degree of Civil Engineer. It is intended that the Diplomas conferring these degrees shall be a guaranty of more than average ability and industry. Students not graduating receive certificates proportioned to what they have done, both as to quantity and quality. Candidates must have presented a thesis completed according to the regulations of the School, must also have paid all dues at the College Treasury, must have returned all books taken from the College Library, and must be present at the conferring of degrees, unless expressly excused.

Architectural Students will find a large part of the general course adapted to their requirements; particularly the Draughting, Mensuration, Stereotomy, Strength of Materials and the study of Difficult Foundations, Building construction, Heating and Ventilation, etc.

ADMISSION

General Conditions for Admission

[See page 35.]

Requirements for Admission

Candidates for admission to the Freshman class in any of the Engineering courses, are required to pass satisfactory examinations in the following subjects:

English Literature, Arithmetic, Algebra, Plane and Solid Geometry, Plane Trigonometry, Modern Geography, History of the United States, Physiology, and an amount of French or German equivalent to one year's study, as given in detail on pages 36-40.

COURSES OF STUDY

Mathematics

The studies of this department include the following: Algebra (completed), Spherical Trigonometry, Analytic Geometry, Descriptive Geometry, Differential and Integral Calculus. Optional courses in Higher Mathematics are also offered. See also pages 53, 54.

Mechanics and Physics

The following are the subjects included in the course:

In **Analytical Mechanics** — Statistics, Dynamics, Hydrostatics, Hydrodynamics, Pneumatics.

In **Physics** — Optics, Acoustics, Heat, Electricity, Magnetism and Galvanism. Physical Laboratory practice is required of all engineering students. See also pages 54, 55.

Astronomy

The instruction in Astronomy includes Spherical Astronomy, Theory of Astronomical Instruments, and Physical Astronomy. The students are also given a practical course in Astronomical Surveying and Location.

Biology

The required studies in the General and Sanitary Engineering course are: Structural Botany, Physiology, and in the Sanitary course, Bacteriology. Physiology is required also in the Electrical course. Structural Botany includes the microscopical study of the vegetable cell, the tissues and the tissue-systems of the higher plants, with special reference to the uses of woods in the constructive arts. In Bacteriology some of the common bacteria of water, air and soil are studied according to the methods of modern bacteriological research. The accompanying lectures treat of bacteria in regard to their place and role in nature, their relations to sanitary science, etc. In this work the student uses the microscope, prepares sections, etc. See also pages 56, 57.

Geology

The required work of the first term of the Junior year is a course in Economic Geology, which includes the explanation of the general principles of geology, and a description of the occurrence and distribution of the mineral deposits and materials for construction in the United States. This is supplemented in the senior year by the course in Mineralogy and Lithology which consists of laboratory study of minerals and building stones. In addition, all the other courses offered by the Geological Department are open as electives to Engineering students who have had the necessary preparation. The course in Field Geology would be found especially helpful to Civil Engineers. See also page 57.

Chemistry, Mineralogy and Metallurgy

The recitations in chemistry extend through three terms. In addition to this, the students receive Laboratory instruction. They are taught the means of qualitative analysis and exercise in the use of the blow-pipe to determine the constitution of the useful minerals. Their knowledge of these materials is increased by a course in determinative mineralogy, in which use is made of the celebrated Wheatley Collection, and a complete set of crystal models. As far as practicable, the operations of industrial chemistry are carried out. Students are taught to tin, zinc, and to guild iron; to electroplate with gold, silver, copper and nickel; to form the various sulpho compounds from pyrites; to burn plaster, lime and cements, and to analyze and test their efficacy; to make and examine the most important alloys; to estimate clays for building and fire-brick, and for the manufacture of porcelain; to analyze fuels, slags and fluxes.

The student is required to go through a thorough course in assaying, treating ores of lead, silver, copper, mercury and gold. Attached to the Laboratory is a library of technological books, always open to the students for reference.

Detached from the Laboratory is a dark-room, which affords opportunity for photographic work. See also pages 55 and 62.

Modern Languages

See page 45 for a description of these courses.

English Literature and Rhetoric

The instruction in English is eminently practical and has special reference to the clear and forcible presentation of a subject by a student. The full course in English Literature is laid down on pages 46 to 48. The full course in Rhetoric is to be found on pages 48, 49. The course required of Engineering students is somewhat abridged so as to embrace those portions deemed most important for their special needs.

In the Senior year one of the required essays of each term will be upon a technical subject, prepared under the direction of the Professor of Civil Engineering, the object being to give the Engineering student practice in the preparation of reports upon Engineering subjects.

Engineering, General Course

The subjects of this course are so arranged as to harmonize with the seasons of the year suitable to field or other work. The course includes the following subjects:

Drawing and Descriptive Geometry. — The instruction in this department extends throughout the entire course. In the first term Freshman the student is instructed in free-hand drawing from the flat and from the object, and in free-hand lettering. In the second term he is instructed in the use of drawing instruments and the construction of geometrical problems, and lettering. In the third term Freshman, and first term Sophomore he obtains practice in plotting the surveys made in the field. Further instruction in Topographical Drawing is given in the first term Sophomore. Descriptive Geometry is begun in the second term Sophomore, and in addition to thorough instruction in the theory, an effort is made to illustrate by problems some of the most common applications in practice. Schroeder's and the Olivier models and the models of intersections of the Paris Polytechnic School are freely used. The collection of models is described on pages 116 to 118. In the third term instruction is given in Shades, Shadows and Perspective and the various projections. In the Junior year the work in drawing includes model and machine drawing and the solution of problems in Graphical Analysis. In the Senior year is given a thorough course in the designing of

Engineering structures, including detail drawings of constructions of wood and iron; this is followed by a course in Stereotomy, with drawings from the Stereotomy models of the Paris Polytechnic School. Practice in blue printing is made an important part of these courses.

Surveying.—The third term Freshman includes instruction and practice in the elementary operations in the field with chain and tape, compass, level and rod and transit. Whenever possible the class is exercised in actual work in laying out lots, surveying lands and computing areas, establishing grades for streets and roads and determining differences in elevation. In the first term Sophomore the subject of Topographical Surveying is taken up and instruction and practice is given in the various methods and instruments. Railroad Surveying is treated in the Junior third term and the students are given exercise in the principal field operations on railroad surveys, office and field location and staking out for construction. The subject of railroad construction and equipment is not treated until the first term of the Senior year.

Geodesy and Astronomical Surveying in the third term of the Senior year comprise a discussion of the figure of the earth; triangulation system; base lines; observations; reductions and adjustment; determination of time, latitude and azimuth; transformation of co-ordinates, map projection.

As a preliminary to instruction in each branch of surveying, a thorough study of the instruments employed is taken up, treating their geometrical, optical and mechanical relations; their adjustments, use and determination of their instrumental constants, errors and limits of precision.

Office computations, plotting and mapping are made an adjunct of field surveys.

Field practice forms an important part of all of the courses in surveying, the classes being divided into sections, and directed by the instructors.

When feasible, about three weeks of uninterrupted field and office practice will be given in the Junior or Senior years.

Applied Mechanics and Materials.—Applied Mechanics is commenced in the first term of the Junior year, and comprises the extension of Analytic Mechanics and the study of Graphical

Analysis, and their applications to engineering problems, operations and constructions, particularly the treatment of stresses, strains, deflections and deformations in elastic materials and structures due to extraneous forces. Closely allied to this are the studies of Hydraulics and Masonry, the former comprising the study of flow through orifices, weirs, pipes and channels, and the development of water power; the latter comprising the mechanics of foundations, piers, abutments, arches, retaining walls, dams, etc.

In conjunction with the above subjects is given the study of the production, preparation, strength and physical properties of the various engineering materials, including timber, stones, mortar, cement, cast iron, wrought iron and structural steel. Practice in Engineering Laboratory is an important adjunct to this study. This entire division, properly correlated, becomes the foundation of all rational engineering design and construction.

Engineering Design.—The courses in Applied Mechanics and Materials prepare the student to undertake the study of Engineering Design proper, which is done throughout the Senior year, as an important feature of the work in bridges, railroads, water-works, architectural engineering, etc. The exercises in this line of work are, as far as possible, assigned from professional practice, and the student is expected to carry out, from assigned data and conditions, the preliminary study, determinations of stresses, types, dimensions and details, and to turn in the results in the form of working drawings, diagrams and memoirs. There is a large collection of drawings of representative engineering structures in the department from which students can obtain correct ideas of modern practice in the designing of details and the methods of the various large companies engaged in this branch of construction.

Water.—The subject of water supply is considered in all its lights. In the first term Junior is given a laboratory course in Chemistry, followed in the second term by a course in water analysis, accompanied by work in analysis of soil and air. In the third term Junior is given an elementary course in Hydraulics, followed in the Senior year by a fuller development of the principles as applied to the supply of water to

cities and villages. This is accompanied by a study of the sanitary aspects of the subject of water supply and preservation of the same from contamination. Some study is also made of pumping engines.

Highways.—The study of highways comprises a consideration of the highway as an element in the transportation and social system of the State, the principles of its advantageous location and proper construction; a study of the various modes of construction and the materials employed, its proper maintenance; systems of highway administration.

Streets and Pavements.—A study of the methods of laying out and grading streets and pavements, and of the various paving methods and materials and their treatment, with special reference to their economic and sanitary aspects.

Motors and Motive Power.—An elementary course in motors and motive power is given in the first and second terms Senior year, comprising a study of the sources of demand and supply of power, steam boilers, steam engines, gas engines, water wheels, electric motors, etc.

Engineering Law and Procedure.—Two hours per week, during the last term Senior year, are assigned to the study of the principles and procedure of commercial and financial transactions, contracts, agency, corporations, laws relating to land boundaries and titles, water courses, surveys, mining claims, etc.

Thesis.—Each candidate for graduation is required to present, on or before the second Wednesday in June of his graduation year, a satisfactory thesis on a subject that has been approved by the Professor of Civil Engineering. This thesis must be either a design for some engineering structure, process or operation; or an independent investigation of some principle, problem, or matter of engineering importance. Reviews of existing structures, plants or processes, unless of special educational value, will not be approved as subjects. This thesis is to be in a form prescribed at the time of approval of the subject, and is to be bound for deposit in the library of the Engineering School, and must be presented in this shape on

or before the stipulated date. The Thesis should be presented for the inspection of the Professor of Civil Engineering at intervals during its progress.

Sanitary Engineering Course

The course in Sanitary Engineering differs from the general Engineering course, by omitting the Astronomical Surveying, Geodesy and Railroad Construction, and substituting therefor Heating and Ventilation, House Drainage and Plumbing, Sewerage and Sewage Disposal, Sanitary Biology, Sanitary Codes and Laws, and an increase in the amount of Chemistry and Chemical Laboratory work.

Sanitary Condition of Houses.—In the first term Senior, will be given courses in Heating and Ventilation and in House Draining and Plumbing. The latter course will have special attention given to it and methods of water supply and of the removal of house wastes of buildings in all locations, from the isolated country house to that in a thoroughly drained city, will be considered.

Sewerage and Drainage.—The study of systems of sewerage and drainage and sewage disposal will extend through the last term Senior. The comparative advantages of various systems will be shown and the details of construction and maintenance will receive careful attention.

A course of lectures in the third term Senior will present the basis for the preparation of Sanitary codes and the principles upon which laws touching the subject of the public health are based.

Thesis.—A thesis upon some subject connected with Sanitary Engineering, under the general regulations stated on page 113 will be a requirement for graduation from this course.

Electrical Engineering Course

This course was first offered and students admitted to the lower classes in the fall of 1895. The course is now fully arranged and valuable facilities have been secured for it. Running parallel with the two other courses through the third year, it substitutes for Geodesy, Water Supply Engineering,

Sewerage, Railroad Construction, Heating and Ventilation, Bacteriology and other allied work, in the General and Sanitary Engineering courses, an equivalent amount of work in Mathematical Theory of Electricity (continued), Electrical Transmission of Energy, Design of Dynamos and Direct Current Apparatus, Theory of Alternating Currents and Design of Alternating Current Machinery, and Electrical Laboratory work.

In addition to the laboratory equipment in electro-physics, the electrical laboratory equipped with direct and alternating current apparatus affords excellent opportunity for experimental work.

Through the active interest which the General Electric Company of Schenectady takes in technical education, an arrangement has been effected between the college authorities and the officials of the company, by which students in the Junior and Senior classes are admitted to the company's works at regular scheduled times under the direction of their instructor, with the privilege and opportunity of studying and inspecting the plant and operations, and of being regularly instructed therein by their instructor. This work will be systematically arranged and is to be given simultaneously with the corresponding class and laboratory work to which it will form an important and valuable adjunct.

This privilege of becoming familiar with the shops and machinery of the largest electrical manufacturing company in existence and the encouragement that this company offers to technical education adds much to the value of the course here offered.

Voluntary Studies

Any of the studies of the Classical or of the Scientific course of the college may be taken by the Engineering students without extra charge. Many avail themselves of this opportunity for special study in Ancient Languages, Biology and Zoölogy, Mental and Moral Science, English, Logic, etc.

Instruments and Apparatus

This department is supplied with field instruments of the best description, comprising a large Theodolite suitable for

refined geodetic operations, Transits, Surveyor's Compass, Prismatic Compass, Burneir's Compass, Solar Compass, Y Levels, the Levels of Troughton, Egault, Lenoir and Burneir; Plane Table, Sextant, Octant, Mountain Barometers, Aneroid Barometer and a Chronometer.

The extensive private collection of models and instruments belonging to the late Professor Gillespie has been purchased for the Engineering School.

The collection of models in Descriptive Geometry and Stereotomy is very complete. The following are some of the most important:

The Olivier Collection. — This consists of about fifty models representing the most important and complicated ruled surfaces of Descriptive Geometry, particularly warped or twisted surfaces. Their directrices are represented by brass bars, straight or curved, to which are attached silk threads representing the elements or successive positions of the generatrices of the surfaces. Each of these threads has a weight suspended by it so as always to make it a straight line. These weights are contained in boxes sustaining the directrices and their standards. The bars are moveable in various directions, carrying with them the threads still stretched straight by the weights in every position they may take; so that the forms and natures of the surface which they constitute are continually changing, while they always remain ruled surfaces. In this way a plane is transformed into a paraboloid, a cylinder into a hyperboloid, etc.

These models were invented by the late Théodore Olivier, while Professor of Descriptive Geometry at the Conservatoire des Arts et Métiers, in Paris. One set of them is now deposited there, and a second is in the Conservatory of Madrid. Copies of some of them are to be found in most of the polytechnic schools of Germany. The Union College set is the original collection of the inventor, having been made in part by his own hands, and, after his death in 1853, retained by his widow till bought of her by Professor Gillespie, in 1855. It is more complete than that in the Paris Conservatoire. It may be worth noticing that the silvered plates on the boxes, reading "*Inventé par Théodore Olivier,*" etc., were added by Madame

Olivier, at her own expense, after the purchase, as a tribute to the memory of her husband, her own words being, "*Je tenais à ce que chaque instrument portât le nom du savant dont la réputation passera à la postérité.*"

Professor Bardin's (Paris) plaster models (seventy) of the INTERSECTIONS of prisms, pyramids, cylinders, cones, etc.

Schroeder's (Darmstadt) models (twenty) of elementary DESCRIPTIVE GEOMETRY. The planes of projection are in wood, and the lines and surfaces in metal; models illustrating Shades and Shadows.

Stone Cutting models (twenty) in plaster, selected from those of L'École Polytechnique of Paris.

Professor Bardin's models (ten) in plaster, of OBLIQUE ARCHES.

Groined and cloistered arch models (ten) in wood and plaster. Models of structures in stone, consisting of bridges, culverts, etc.

Winding-stair models in wood and plaster. Full sized models of voussoirs and skew-backs of an oblique arch.

Models in Topography.—French and German plaster models, giving all the different forms of ground, accompanied by topographical drawings, showing how to represent these forms by contour lines, hatchings, and shades from vertical and oblique light; models and maps in colored topography; a large model of Mount Cenis Pass, showing the wagon road and contour lines.

Architecture.—Models of the five orders of Architecture from L'École des Beaux Arts, Paris; portals; stairs; roofs; walls; buttresses; domes, etc.

Engineering.—Schroeder's models of joints, brick bonds, etc.; spur wheels; bevel wheels; cranes; pile drivers; various forms of water-wheels; pumps; cylinders; valves, eccentrics, etc.; steam engines.

Casts of St. Venant's models showing the changes of form in bodies subjected to flexure. Full sized model of the liquid vein measured by Poncelet and Lesbros.

Models of bridges of various systems, comprising truss, suspension, tubular and arch bridges; Doyne's Dynamometer Bridge Models showing, by means of dynamometer, strains at different

points; models of roof trusses, arranged for using the dynamometer to show the different stresses.

Models of fortifications, illustrating Vauban's system; shot, shell, etc.

Models of culverts, piers, abutments, culvert heads, wing walls, rail sections, etc.

Physical Apparatus

(See page 54.)

Collections in the Department of Chemistry

In Mineralogy.—The Wheatley collection contains nearly 4,000 specimen of minerals, the results of the labors of Charles M. Wheatley. All of these have been labeled according to the nomenclature and order adopted by Dana. They are without exception open at all times to the students. They furnish an admirable means of practical illustration in Mineralogy. Among the rare and valuable specimens are those of Anglesite, Cerusite, Mimetite and Calcuprite, which in American specimens are equalled only by those in the British Museum. There are many fine specimens representing the noble metals from all parts of the world. There are few known species of minerals of which the collection does not contain some specimens.

In addition to this there is a large series of unlabeled specimens for crystallographic and blow-pipe examination.

In Metallurgy.—The college possesses a suite of ores of the useful metals, comprising over 1,000 specimens. These have been arranged to illustrate their mode of occurrence and geographical distribution. In addition are the fluxes, fuels, etc., used in obtaining the metals from the ores, together with the slags and metals themselves in various forms. There is a large number of models and drawings of stacks, furnaces, etc.; also suites of specimens of wood, charcoal, mineral coal, peat, etc., for physical inspection; also specimens of most of the useful alloys.

In Industrial Chemistry.—A large number of specimens of the materials used in the manufacture of the mineral and of some of the organic acids; the crude products themselves and the materials used in the manufacture of the alkalis, soaps, matches, black lead, candles, petroleum products; linseed, olive, castor, cottonseed and other oils; paper, porcelain, glass, fire and building brick, mortar and cements, beet and cane sugars, white lead and other paints, etc., etc.

Maps, Drawings, Etc.

This collection embraces a large number of maps, plates, profiles, topographical drawings and spherical projections; about fifty thousand engravings, lithographs, photographs, and detail drawings of engineering and architectural structures; working drawings of machines, bridges, buildings, etc.

Library

The students have the use of the College and Society Libraries. The former contains the Engineering and Scientific Library of the late Professor Gillespie. See page 60.

Physiology and Physical Education

(See page 58.)

For catalogue or special information, address

OLIN H. LANDRETH, Schenectady, N. Y.

ORDER OF STUDIES

Courses Leading to Degree of B. E.

[The Freshman, Sophomore and Junior years are alike for the General, the Sanitary and the Electrical Engineering Course.]

Freshman Year

First Term

Hours per week.

- 3 French.
- 3 German.
- 3 Freehand Drawing.
- 5 Algebra.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.

Second Term

- 3 French.
- 3 German.
- 4 Spherical Trigonometry and Analytic Geometry.
- 2 Mensuration.
- 3 Mechanical Drawing.
- 1 Physiology.
- 1 Gymnastics.
- Descriptive Essays.

Third Term

- 3 French.
- 3 German.
- 3 Rhetoric.
- 4 Analytic Geometry.
- 4 Surveying and Plotting.

Sophomore Year

[Alike for all Engineering Courses.]

First Term

Hours per week.

- 5 Calculus.
- 5 Topographical Surveying.
- 3 Chemistry.
- 3 English Literature.
- 1 Physiology of Exercise.

Second Term

- 3 Calculus.
- 5 Mechanics.
- 2 English Literature.
- 3 Chemistry.
- 3 Descriptive Geometry.
- 1 Physiology of Exercise.
- One Essay and one Oration.

Third Term

- 5 Physics and Physical Laboratory.
- 3 Calculus.
- 3 Descriptive Geometry; Shades and Shadows.
- 3 Chemistry.
- 2 City Surveying.
- 1 Physiology of Exercise.
- One Essay and one Oration.

Junior Year

[Alike for all Engineering Courses.]

First Term

Hours per week.

- 5 Physics and Physical Laboratory.
- 4 Applied Mechanics.
- 3 Economic Geology.
- 2 American History.
- 3 Roads and Pavements.
- Rhetorical Exercises.

Second Term

- 5 Mechanics of Materials and Engineering Laboratory.
- 2 American History.
- 3 Machine and Shop Drawing.
- 2 Roads and Pavements.
- 1 Natural Perspective.
- 3 Astronomy.
- Rhetorical Exercises.

Third Term

- 4 Stresses in Structures and Graphical Analysis.
- 3 Hydraulics.
- 2 Thermodynamics.
- 3 Route Surveying.
- 3 Mathematical Theory of Electricity.
- 2 American History.
- Rhetorical Exercises.

GENERAL COURSE

Senior Year

First Term

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 2 Stereotomy.
- 2 Outlines of Architecture.
- 2 Railroad Construction.
- 2 Lithology and Mineralogy.
- One Literary Essay.
- One Technical Essay.

Second Term

- 3 Motors and Motive Power.
- 4 Engineering Design and Construction.
- 3 Water Supply Engineering.
- 2 Building Construction.
- 2 Method of Least Squares.
- 3 Sewerage.
- One Technical Essay.
- One Literary Essay.

Third Term

- 5 Engineering Design and Construction.
- 2 Engineering Law and Procedure.
- 4 Geodesy and Field Astronomy.
- 4 Electives.
- 1 Thesis.

SANITARY COURSE

Senior Year

First Term

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 3 Heating and Ventilation.
- 2 Stereotomy.
- 2 Lithology and Mineralogy.
- 1 House Drainage and Plumbing.
One Literary Essay.
One Technical Essay.

Second Term

- 3 Motors and Motive Power.
- 4 Engineering Design and Construction.
- 3 Water Supply Engineering.
- 2 Building Construction.
- 3 Sewerage.
- 2 Structural Botany.
One Literary Essay.
One Technical Essay.

Third Term

- 5 Engineering Design and Construction.
- 3 Sewage Disposal.
- 2 Engineering Law and Procedure.
- 3 Bacteriology.
- 1 Sanitary Codes and Laws.
- 2 Electives.
- 1 Thesis.

ELECTRICAL COURSE

Senior Year

First Term

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 4 Mathematical Theory of Electricity.
- 4 Electrical Transmission of Energy.
- One Literary Essay.
- One Technical Essay.

Second Term

- 3 Motors and Motive Power.
- 4 Electrical Transmission of Energy.
- 2 Engineering Design.
- 4 Dynamo Designing.
- 4 Electrical Laboratory.
- One Literary Essay.
- One Technical Essay.

Third Term

- 3 Alternating Current Machine Designing.
- 3 Station Design and Construction.
- 4 Alternating Currents.
- 2 Engineering Law and Procedure.
- 3 Electives.
- 1 Thesis.

ALBANY MEDICAL COLLEGE

MEDICAL DEPARTMENT

UNION UNIVERSITY

SIXTY-NINTH SESSION

ALBANY MEDICAL COLLEGE

With the session of 1897-'98 a four year course was inaugurated. The curriculum embraces lectures by professors and lecturers; recitations conducted mainly by instructors, and practical demonstrations, clinical teaching and laboratory work, in which the professors in the different departments are assisted by clinical assistants and demonstrators.

The college building is well appointed in its lecture rooms, laboratories, dissecting rooms and museums. The chemical laboratory is fitted with every requisite for the illustration of the lectures and the use of students, while the new Bender Hygienic Laboratory furnishes unexcelled facilities for instruction in histology, embryology, pathology, bacteriology and clinical microscopy.

The location of the college at Albany is such as to afford superior advantages to the student. The hospitals and dispensaries furnish always an abundant supply of material for the illustration of clinical medicine and surgery, while the museums are especially rich in anatomical and pathological preparations, unequalled in their variety and rarity.

The Albany Hospital, St. Peter's Hospital, Childs' Hospital, Albany Hospital for Incurables, County Hospital, together with the Eye and Ear Infirmary, and the Dispensaries connected with each, are by the regulations of their governing boards, made available for clinical purposes to the students.

The appointments to positions in the Albany Hospital and St. Peter's Hospital as resident physician and surgeon, and as first and second assistants, and in the Ellis Hospital at Schenectady, are annually made and are competed for by members of the graduating class.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President of the University.

ALBERT VANDER VEER, M. D., PH. D., DEAN,
Professor of Didactic, Abdominal and Clinical Surgery.

MAURICE PERKINS, M. D.,
Professor of Chemical Philosophy and Organic Chemistry.

JOHN MILTON BIGELOW, M. D., PH. D.,
Professor of Diseases of the Throat and Nose.

SAMUEL BALDWIN WARD, M. D., PH. D.,
Professor of Theory and Practice of Medicine and Hygiene.

JAMES PETER BOYD, M. D.,
Professor of Obstetrics, Gynecology and Diseases of Children.

WILLIS GAYLORD TUCKER, PH. D., F. C. S., REGISTRAR,
Professor of Inorganic and Analytical Chemistry and
Toxicology.

WILLIAM HAILES, M. D.,
Anthony Professor of Pathological Anatomy, Embryology,
Histology and Fractures and Dislocations.

CYRUS STRONG MERRILL, M. D.,
Professor of Ophthalmology and Otology.

FREDERIC COLTON CURTIS, M. D.,
Professor of Dermatology.

HENRY HUN, M. D.,
Professor of Diseases of the Nervous System.

SAMUEL ROSEBURGH MORROW, M. D.,
Professor of Anatomy and of Orthopædic and Operative
Surgery.

HERMAN CAMP GORDINIER, M. D.,

Professor of Physiology.

HOWARD VAN RENSSELAER, M. D.,

Professor of Materia Medica and Therapeutics, and Adjunct
Professor of Theory and Practice of Medicine.

Adjunct Professors

JOSEPH DAVIS CRAIG, M. D.,

Anatomy. Demonstrator of Anatomy and Curator of the
Museum.

WILLIS GOSS MACDONALD, M. D.,

Surgery.

GEORGE BLUMER, M. D.,

Histology, Pathology, and Bacteriology. Director of Bender
Hygienic Laboratory.

JOHN VINCENT HENNESSY, M. D.,

Materia Medica.

Clinical Professors

HERMAN BENDELL, M. D.,

Otology.

THEODORE F. C. VAN ALLEN, M. D.,

Ophthalmology.

ANDREW MAC FARLANE, M. D.,

Physical Diagnosis and Lecturer on Medical Jurisprudence.

CLINTON BRADFORD HERRICK, M. D.,

Railway Surgery.

Lecturers

WILLIAM GRANT LEWI, PH. G., M. D.,
Pharmacy, and Instructor in Materia Medica.

LEO HAENDEL NEUMAN, M. D.,
Symptomatology, Diseases of Stomach and Intestines and
Instructor in Theory and Practice.

WILLIAM OLIN STILLMAN, M. D.,
History of Medicine.

ARTHUR GUERNSEY ROOT, M. D.,
Throat and Nose.

JESSE MONTGOMERY MOSHER, M. D.,
Insanity, and Instructor in Neurology.

ARTHUR W. ELTING, M. D.,
Clinical Microscopy.

Instructors

GEORGE EMORY LOCHNER, M. D.,
Obstetrics.

CHARLES HENRY MOORE, M. D.,
Ophthalmology and Otology.

THOMAS WILLIAMS JENKINS, M. D.,
Histology and Pathological Anatomy.

THOMAS ADDIS RYAN, M. D.,
Surgery.

WILFRED SILVESTER HALE, M. D.,
Anatomy.

CLEMENT FRANK THEISEN, M. D.,
Throat and Nose.

LANSING BETTS WINNE, M. D.,
Clinical Medicine.

JAMES THOMAS MCKENNA, M. D.,
Physiology.

JAMES MANNING MOORE, M. D.,
Orthopedics.

CHARLES HARPER RICHARDSON, M. D.,
Surgery, Ass't Dem. Anatomy.

WILLIAM PITNEY BRIERLEY, M. D.,
Obstetrics.

HARRY JUDSON LIPES, M. D.
Obstetrics.

THEODORE JAMES BRADLEY, PH. G.,
Chemistry.

SPENCER LYMAN DAWES, M. D.,
Theory and Practice of Medicine.

WILLIAM HENRY HAPPEL, M. D.,
Therapeutics.

ARTHUR SAUTTER, M. D.,
Dermatology.

WARREN HARKNESS EVERETT, M. D.,
Embryology.

Clinical Assistants

CHARLES LEONARD MYERS, M. D.,
HARRY SEYMOUR PEARSE, M. D.,
WILLIAM HENRY GEORGE, M. D.,
EDWARD NORRIS KIRK MEARS, M. D.,
WILLIAM SAMUEL BRISTOL, M. D.,
ALVAH HARRY TRAVER, M. D.,
JAMES BENEDICT KENNAH, M. D.

CALENDAR, 1899-1900**1899**

Regular winter session begins,	Tuesday, September 26.
Thanksgiving vacation begins,	Wednesday, November 29.
Lectures resumed, . . .	Monday, December 4.
Christmas vacation begins,	Friday, December 22.

1900

Lectures resumed, . . .	Wednesday, January 3.
Commencement, . . .	Tuesday, May 2.

Preliminary Examination.—The preliminary examination of medical students is under the control of the Board of Regents of the University of the State of New York. Those contemplating the study of medicine are advised to apply to the Examination Department, University State of New York, Albany, by letter or otherwise, for information concerning this examination. One of the examinations will be held in Albany, during the first week of the session. (For copy of law, with credentials and qualifications accepted by the Regents in place of examination, see catalogue of the Medical College.)

Mid-Winter Written Examinations in all the departments are held before the Christmas vacation. A printed schedule of these examinations is furnished the class.

Course of Instruction

The four years' graded course now required in this college when fully in operation will be essentially as shown in the following curriculum:

First Year

1. **Anatomy**—three lectures; one recitation; ten hours dissection, six to ten weeks. 2. **Inorganic Chemistry**—three lectures; four hours laboratory; one recitation. 3. **Physiology**—two lectures; one recitation. 4. **Histology**—one lecture; four hours

laboratory; one recitation. 5. **Materia medica**—two lectures; one recitation. 6. **Pharmacy**—one lecture. 7. **General surgical clinic**—two hours.

Lectures 12; laboratory 8 hours; recitations 5; clinics 2.

Second Year

1. **Anatomy**—three lectures; one recitation. 2. **Organic Chemistry**—two lectures; one recitation. 3. **Physiology**—three lectures; one recitation. 4. **Therapeutics**—one lecture. 5. **Medicine**—three lectures; one recitation. 6. **Surgery (minor)** two lectures; one recitation. 7. **Pathology**—one lecture; two hours laboratory; one recitation. 8. **Embryology**—laboratory, half the term. 9. **History of medicine**—one lecture, half the term. 10. **Clinics**—one hour medical; two hours surgical.

Lectures 15½; laboratory 2½ hours; recitations, 6; clinics 3.

Third Year

1. **Practice of medicine**—two lectures; one recitation. 2. **Bacteriology**—two hours laboratory; one recitation. 3. **Clinical microscopy**—two hours laboratory. 4. **Therapeutics**—two lectures; one recitation. 5. **Electro-Therapeutics**—one lecture half the term. 6. **Obstetrics**—two lectures; one recitation. 7. **Pediatrics**—one lecture. 8. **Diseases of the nervous system**—one lecture; one clinic. 9. **Surgery (pathology, operative, fractures, dislocations)**—three lectures; one recitation. 10. **Physical diagnosis, etc**—section work, three hours. 11. **Special clinics**—one hour. 12. **Clinics**—two hours medical; two surgical.

Lectures 11½; laboratory 4 hours; recitations 5; section work 3; clinics 6.

Fourth Year

1. **Practice of medicine**—three lectures; one recitation. 2. **Diseases of nervous system**—one lecture; one clinic. 3. **Gynecology**—one lecture. 4. **Obstetrics**—one lecture; one recitation. 5. **Surgery (including orthopedics)** three lectures; one recitation. 6. **Medical jurisprudence, hygiene**—two lectures. 7. **Specialties**—one recitation. 8. **Conferences**—one medical; one surgical. 9. **Insanity**—one lecture, half the term. 10. **Special clinics**—five hours. 11. **Clinics**—two hours medical; three surgical. 12. **Section work**—four hours.

Lectures 11½; recitations 4; conferences 2; clinics 10; section work 4 hours.

Fees and Expenses

All fees are payable in advance, and are as follows: For matriculation, five dollars, payable each year; for each lecture course, one hundred dollars, but a ticket entitling to attendance upon four courses may be obtained on payment of three hundred dollars in advance. Dissection, ten dollars, which is required the first year and optional during the other years of the course; dissecting material is free, and there are no incidentals in this department. Courses in the chemical laboratory, in histology, in pathology, and in bacteriology, ten dollars each, and in embryology, and clinical microscopy, five dollars each. The graduation fee is twenty-five dollars, which must be paid to the registrar before the candidate can be admitted to an examination.

The cost of living in Albany is less than in most other cities of its size. The janitor of the college keeps a list of boarding houses at which good rooms and board can be obtained at from four to five dollars a week or upwards, and by clubbing together students can live comfortably at still lower rates.

Requirements for Graduation

The candidate must be twenty-one years of age, and exhibit a certificate from a physician or surgeon, duly authorized by law to practice his profession, that he has studied medicine and surgery under his instruction, after the age of eighteen, during a period of not less than three full school years of at least nine months each, including time spent in attending lectures, and he must present evidence of having complied with the law concerning preliminary examination.

Students matriculated after January 1, 1898, must study not less than four school years of nine months each, and attend not less than four regular courses of lectures, of which the last shall have been at this college. Students who have attended one or more courses of lectures at other recognized medical colleges, who may desire to be admitted to advanced standing in this college, will be credited with the work they may have done and with examinations they may have passed, other than those of the senior year, if satisfactory evidence of such attendance and of the passing of such examinations is presented.

Students in Union College having the profession of medicine in view are permitted to take the first year studies of the Albany Medical College as a substitute for the studies of the first two terms of the senior year. This enables such students to lessen the time of their academic and professional studies by one year.

He must be of good moral character.

He must maintain a satisfactory standing during his course and pass a satisfactory final examination in the several branches taught.

Regular and punctual attendance is required, and matriculation tickets are endorsed with attendance at the end of the term.

For catalogues or information concerning the session of 1900-1901, address

WILLIS G. TUCKER, M. D., *Registrar*,
Albany, N. Y.

January 1, 1900.

ALBANY LAW SCHOOL

LAW DEPARTMENT

UNION UNIVERSITY

FIFTIETH YEAR

1900-1901

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President of the University.

J. NEWTON FIERO, LL. D., DEAN,
Procedure, Equity, Torts, Domestic Relations.

JAMES W. EATON,
Evidence, Contracts.

JAMES F. TRACEY,
Corporations.

HON. ALBERT C. TENNANT,
Real and Personal Property, Criminal Law.

LEWIS R. PARKER,
Guaranty, Suretyship, Bailments.

Special Lecturers

HON. IRVING G. VANN,
Insurance.

HON. JUDSON S. LANDON, LL. D.,
Constitutional Law.

HON. ALTON B. PARKER,
Trial of Causes.

HON. D. CADY HERRICK,
Municipal Corporations.

HON. ALDEN CHESTER,
The Federal Judicial System.

HON. SIMON W. ROSENDALE,
Professional Ethics.

HON. DANFORTH E. AINSWORTH,
The Statutes of New York.

ANDREW MACFARLANE, M. D.,
Medical Jurisprudence.

HON. WALTER E. WARD,
Patents, Copyright, and Trade-Marks.

FLETCHER W. BATTERSHALL,
Elementary Law.

ALBANY LAW SCHOOL

This School is among the oldest institutions of the kind in the country, having been established in 1851, and its graduates number many of the most successful men in the profession. The School is and has been largely represented in the Executive, Judicial and Legislative departments of this and many other States, as well as of the federal government.

It became a part of Union University in 1873, and begins its fiftieth year as a law school with the coming scholastic year. During its long and successful career it has, in common with other law schools, done much to demonstrate what was at one time doubtful, but is now accepted almost as an axiom, that a course at the law school is a well-nigh necessary prerequisite to a successful professional career. Its instructors have always been men of repute and standing, both for professional learning and personal character.

Local Advantages

The local advantages of the city of Albany, as the seat of a professional school, cannot be overrated. It is the capital of one of the leading States in the Union, whose Legislature is in session here for the third part of every year, affording opportunities for observing the machinery of legislation, and of listening to learned discussions of important governmental and social questions. It is easily accessible, remarkably healthful, and the scene of great business and professional activity. It is large enough to afford its inhabitants all the means of culture and recreation naturally to be looked for in a city, while it is not so large as to make the cost of living burdensome, even to persons of extremely limited means.

Facilities for Study

The facilities afforded the students for reading and study are unsurpassed.

Besides the convenient and well chosen library of the school, accessible to the students at all hours of the day and evening,

the students have the privilege of using the State Law Library, the most extensive and best selected in the United States, consisting of 65,000 volumes.

With free access to these libraries the student may be relieved to a great extent from purchasing text-books.

Academic Year

The academic course, leading to the degree of LL. B., is two years, divided into two semesters, each. Students may enter at the beginning of any semester. The scholastic year for 1900-1901 begins September 25.

Requirements for Admission to the Senior Class

Any student not a college graduate who has completed two years of required legal study, after conforming with the requirements of the Regents as to general education, or any college graduate who has completed one year of such study after graduation, and any student presenting a certificate that he has satisfactorily completed one year of study at a law school of recognized standard, will be admitted to the senior class without examination, upon production of the Regents' and clerk's certificates, and will be graduated in the same manner as students have heretofore been graduated in the one year course, and will receive a certificate for the time spent at the school; but the degree of LL. B. will be conferred only upon students who have completed the entire course of two years at one or more law schools.

Requirements for Admission to the Junior Class

Any student who has conformed to the requirements of the Regents as to general education, or satisfies the Faculty that he will so conform to such requirements within the year allowed by the Regents for that purpose, after commencing the study of law, may enter the Junior class, and upon completion of the two years course and passing the required examination will be graduated with the degree of LL. B.

Methods of Instruction

Instruction is given by lectures involving a free use of simple text-books in connection with leading cases. Instruction is

also afforded by the study and discussion of selected cases, which are memorized. Moot courts are frequently held by a professor assigned for that work.

Examinations

Written examinations will be held at the close of each semester, and no student will be allowed to continue his studies who does not maintain a proper standard both in deportment and work. This rule will be rigidly enforced, so that a certificate of attendance upon the Albany Law School for any given period will be evidence that the time has been honestly and studiously devoted to the study of the law.

Requirements for Graduation

Candidates for graduation in one year course must have attended during a full course of two semesters; must have passed in all examinations, and conformed to all requirements.

Candidates for the degree of LL. B., must have attended two full years, passed in all examinations and conformed to all requirements.

Tuition

The fees for tuition are payable in advance as follows: For the full course, \$100, or \$50 for each semester. Members of the bar of this or other States will be admitted on payment of \$75 for the course, or \$40 a semester. Special students will be admitted on special terms. A matriculation fee of ten dollars and diploma fee of two dollars are charged.

No fees will be returned on account of non-attendance for any cause, but when a whole term is necessarily lost, the student may attend the corresponding term of the next year without additional charge.

Board, etc.

The price of board in Albany varies, according to the accommodations offered, or required, from \$4 to \$7, including room, fuel and light. *Students intending to enter the school are particularly requested to inform the secretary, W. R. Davidson, Esq., in advance, if possible.* A list of boarding houses is kept by the

secretary for the information of students, and upon application to him at the office in the building they will be assisted in securing satisfactory accommodations.

For catalogues or other information, address

THE ALBANY LAW SCHOOL,
Albany, N. Y.

ALBANY COLLEGE OF PHARMACY

DEPARTMENT OF PHARMACY OF

UNION UNIVERSITY

ALBANY COLLEGE OF PHARMACY

The Albany College of Pharmacy was created by act of the Board of Governors of Union University, June 11, 1881, and constitutes the *Department of Pharmacy of Union University*. It was incorporated as the "Albany College of Pharmacy," August 27, 1881.

The exercises of the college are held in the Albany Medical College building, on Eagle street, distant but a block from the Capitol. The lecture rooms and laboratories of this commodious and well arranged building are perfectly adapted to the needs of the College of Pharmacy, and furnish to the faculty the very best facilities for imparting instruction. The lectures are delivered in the chemical lecture room on the first floor, adjoining which is the large and well fitted chemical laboratory, where instruction is given to the classes in practical chemistry. The pharmaceutical laboratory is thoroughly equipped and is in charge of a competent director who superintends the work in this department.

The previous general education of a student in any college has much to do with the amount of benefit to be derived from the college course, and in justice to the student and the college itself, this institution, in connection with others of the teaching colleges of Pharmacy, now requires of those entering as regular students for the course, a knowledge of the ordinary English branches as taught in the grammar schools of this State.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President of the University.

WILLIS G. TUCKER, M. D., PH. D., 4 Lancaster Street,
Professor of Chemistry.

ALFRED B. HUESTED, M. D., PH. G., 144 State Street,
Professor of Botany and Materia Medica.

GUSTAVUS MICHAELIS, PH. G., 2 Broadway,
Professor of Pharmacy.

Other Instructors

DE BAUN VAN AKEN, PH. G.,
Lecturer on Pharmacy.

THEODORE J. BRADLEY, PH. G.,
Chemistry.

FRANK RICHARDSON, PH. G.,
Materia Medica and Director of Pharmaceutical Laboratory.

THOMAS W. JENKINS, M. D.,
Lecturer on Microscopy.

Board of Examiners

LOUIS SAUTTER, JR., PH. G. CHARLES H. GAUS, Esq.
EDWIN F. HUNTING, PH. G.

Preliminary Examination

All applicants for admission to the regular course of lectures of this college will be required to pass a preliminary examination, or present a grammar school certificate entitling the holder to enter a High School, or other satisfactory written evidence of attendance at an academy equal in grade to the High Schools of this State. A knowledge of Arithmetic, Geography and Grammar, as far as taught in the grammar schools of this State, and entitling the possessor to enter a High School of the State, will be required.

The Annual Lecture Term

The annual course of instruction in this college consists of six or more lectures each week during a period of five months, together with practical laboratory work, etc. The next course opens with an introductory lecture on Monday evening, October 1, 1900, and lectures will be delivered every week-day evening thereafter, except upon Saturdays, when the hour is at 2 o'clock P. M. No lectures or college exercises will be given upon Thanksgiving day, or the mid-winter holidays. The course is graded and extends over two years; students being divided into junior and senior classes, consisting of first and second year students respectively. The lectures to the senior class are given upon Monday, Wednesday and Friday evenings, and to the junior class upon Tuesday and Thursday evenings and Saturday afternoon, but students are entitled to attend all lectures without extra expense.

Requirements for Graduation

The diploma of this college confers the degree of GRADUATE IN PHARMACY (Ph. G.). Applicants for this degree must be at least twenty-one years of age, of good moral character, have attended two full courses of lectures (which shall have included all laboratory practice) in this college, or the last course in this college and the first in some other college of pharmacy, or corresponding institution where the same branches are taught; have had, inclusive of the time of attendance at this college, four years' practical experience with some reputable and competent pharmacist; have passed a satisfactory examination and paid all fees as hereafter stated.

Fees for Tuition

Matriculation Fee (paid but once, but ticket required each year).	\$3 00
Lecture Tickets, full course (per session).....	30 00
Chemical Laboratory Fee (one course required).....	15 00
Pharmaceutical Laboratory Fee (each course).....	15 00
Course in Practical Microscopy.....	10 00
Graduation Fee.	10 00
Quiz Ticket.	5 00

Students who have attended two full courses of lectures at this college may attend further courses without extra charge, except quiz and laboratory fees, should these be taken. The matriculation ticket is to be taken out by the student at the beginning of his course; the other tickets are to be taken out and paid for during the first month.

For the catalogue of the Department, and further information, address

DEBAUN VAN AKEN, PH. G., *Secretary*.

222 Hamilton Street, Albany, N. Y.

DUDLEY OBSERVATORY

The Dudley Observatory at Albany was incorporated in 1852, and formally inaugurated in 1856. The funds for building were provided through a general subscription in Albany, New York, and other places. Mrs. Blandina Dudley was contributor of more than half the amount secured for all purposes, and of the amount contributed by her, about \$78,000 was, by the terms of her gifts, reserved for endowment.

In 1893 new buildings were erected on a site about two miles distant in a southwesterly direction from the former site. The buildings are now located on Lake avenue, in the southwestern part of Albany, and about 400 yards southwest of Washington Park. For the purpose of this removal and re-establishment more than \$70,000 has been contributed from various sources. Miss Catherine W. Bruce, of New York city, in March, 1892, offered \$25,000, chiefly for permanent endowment, on condition that the removal of the Observatory should be secured in the manner then contemplated. The conditions imposed by Miss Bruce were accepted and the Dudley Observatory is in possession of her gift. Subsequently, in October, 1893, Miss Bruce added \$10,000 to her original gift to the Observatory, making \$35,000 in all. The latter gift was designed to aid in the completion of the equipment of the Observatory, and the balance, \$5,000, if possible, to be carried to endowment. The city of Albany, through the Mayor and Park Commissioners, gave the new site upon property in possession of the Park Commission, and \$15,000 in exchange for the real estate formerly owned by the Dudley Observatory.

The sons of the late Thomas W. Olcott provided the means for refitting the Olcott Meridian Circle, for remounting it on the new site and for housing it in the most approved and perfect manner. Expenditures for this purpose already exceed \$6,000. The sons of the late Robert H. Pruyn gave \$6,000 for the construction of a new equatorial telescope, to be twelve inches in aperture, and adapted both to visual and photographic use. Both instruments are in position, and are ready for use.

Other constructions have been provided at a cost of approximately \$30,000.

Thus, the prospects and appliances of the Dudley Observatory have been completely transformed since March 1, 1892. It has now a modest equipment of very perfect instruments, and the annual means of its support have been substantially increased.

During the past four years Mr. A. J. Roy, A. M., C. E., and Mr. Wm. B. Varnum, A. B., have been employed as computers. The researches of the Observatory have been aided for several years by appropriations from the Bache Fund of the National Academy of Sciences.

The Dudley Observatory was founded for the purposes of astronomical investigation; and this character has been impressed upon it still more firmly by the terms of recent gifts. While no form of educational work is carried on at the Dudley Observatory, the director is always ready to aid assistants and other students of advanced standing in their astronomical studies. Graduate students have occasionally been received, and it is proposed to receive such students in the future; the requirement for admission being the ability to render computing services in lieu of fees.

For further information apply to

LEWIS BOSS, A. M., *Director*,

Albany, N. Y.

INDEX

Union University

	PAGE
Calendar.....	5
Constitution.....	7
Faculty.....	9
Officers.....	8

Union College

Absences.....	83, 84
Admission.....	35
Biology.....	56
Calendar.....	4
Chapel.....	84
Chemistry.....	55
Commencement Awards in 1899.....	98
Committees—of Faculty....	24
—of Trustees.....	21
Conditions.....	84
Courses of Study.....	33
Departments of Instruction..	43
Degrees and Honors.....	93
Degrees conferred in 1899....	95
English.....	46
Expenses.....	86
Entrance Examinations....	42
Faculty.....	22
General Regulations	83
Geology.....	57
Greek.....	43
History.....	49

Honors, Special.....	94
Latin.....	43
Lectures, General.....	59
Library.....	60
Mathematics.....	53
Mechanics.....	54
Modern Languages.....	45
Museums.....	61
Officers.....	24
Order of Studies.....	63
Philosophy.....	52
Physics.....	54
Physiology.....	58
Physical Education.....	58
Political Economy.....	49
Prizes.....	90
Rhetoric.....	48
Rooms.....	86
Scholarships.....	87
Sociology.....	49
Standing.....	83
Students.....	25
Trustees.....	20
Tuition.....	86

School of Civil Engineering

Admission.....	107
Courses of Study	108
Degrees.....	105
Electrical.....	114

	PAGE
Expenses.....	86
Faculty.....	103
General.....	110
Instruments and Apparatus..	115
Order of Studies... .	120
Sanitary	114
Terms and Vacations.....	5

Albany Medical College

Calendar.....	134
Course of Instruction.....	134
Examinations... .	134
Faculty.....	130
Fees and Expenses.....	136
Requirements for Graduation	136

Albany Law School

Admission	143
-----------------	-----

	PAGE
Calendar.....	143
Expenses.....	144
Faculty.....	141
Graduation.....	144

Albany College of Pharmacy

Admission.....	151
Calendar.....	151
Course of Instruction.....	151
Degree.....	1
Faculty.....	150
Fees and Expenses.....	152
Requirements for Graduation	151

Dudley Observatory

Admission.....	154
Equipment and Work.....	153

ANNUAL CATALOGUE
OF
UNION UNIVERSITY



1900-1901

ONE HUNDRED AND SIXTH YEAR

Fort Orange Press
BRANDOW PRINTING COMPANY
ALBANY, N. Y.

ANNUAL CATALOGUE
OF
UNION UNIVERSITY



1900-1901

Fort Orange Press
BRANDOW PRINTING COMPANY
ALBANY, N. Y.

UNION UNIVERSITY

COLLEGE CALENDAR FOR 1901

	S	M	T	W	T	F	S		S	M	T	W	T	F	S
Jan.	6	7	8	9	10	11	12	July	7	8	9	10	11	12	13
	13	14	15	16	17	18	19		14	15	16	17	18	19	20
	20	21	22	23	24	25	26		21	22	23	24	25	26	27
	27	28	29	30	31	..	..		28	29	30	31	..	..	..
Feb.	3	4	5	6	7	8	9	Aug.	4	5	6	7	8	9	10
	10	11	12	13	14	15	16		11	12	13	14	15	16	17
	17	18	19	20	21	22	23		18	19	20	21	22	23	24
	24	25	26	27	28	..	..		25	26	27	28	29	30	31
Mar.	3	4	5	6	7	8	9	Sep.	1	2	3	4	5	6	7
	10	11	12	13	14	15	16		8	9	10	11	12	13	14
	17	18	19	20	21	22	23		15	16	17	18	19	20	21
	24	25	26	27	28	29	30		22	23	24	25	26	27	28
	31	..	..	..	..	..	..		29	30	..	..	..	..	..
Apl.	7	8	9	10	11	12	13	Oct.	6	7	8	9	10	11	12
	14	15	16	17	18	19	20		13	14	15	16	17	18	19
	21	22	23	24	25	26	27		20	21	22	23	24	25	26
	28	29	30	..	..	..	..		27	28	29	30	31	..	..
May	5	6	7	8	9	10	11	Nov.	3	4	5	6	7	8	9
	12	13	14	15	16	17	18		10	11	12	13	14	15	16
	19	20	21	22	23	24	25		17	18	19	20	21	22	23
	26	27	28	29	30	31	..		24	25	26	27	28	29	30
Jun.	2	3	4	5	6	7	8	Dec.	1	2	3	4	5	6	7
	9	10	11	12	13	14	15		8	9	10	11	12	13	14
	16	17	18	19	20	21	22		15	16	17	18	19	20	21
	23	24	25	26	27	28	29		22	23	24	25	26	27	28
	30	..	..	..	..	..	..		29	30	31	..	..	..	..

Figures in heavy type indicate days on which Union College is in session.

UNIVERSITY CALENDAR

1901

- 2 Jan. Winter term of Union College begins.
- 3 Jan. Winter term of Medical College resumes.
- 24 Jan. Day of Prayer for Colleges.
- 1 Feb. First semester of Law School ends.
- 5 Feb. Second semester of Law School begins.
- 21 Feb. Allison-Foote Prize Debate between the Literary Societies.
- 22 Feb. Washington's Birthday.
- 2 March Examination for conditioned students.
- 12 March Commencement of the College of Pharmacy.
- 22 March Winter term of Union College ends.
- 25 March Spring term of Union College begins.
- 15 April Selection of Junior and Sophomore prize orators.
- 1 May Commencement of the Medical College.
- 4 May Examination for conditioned students.
- 15 May Date for presentation of prize essays.
- 29 May Commencement of Law School.
- 30 May Decoration Day.
- 9 June Sunday. Baccalaureate Sermon, Union College.
- 10 June Prize Contest in Extemporaneous Speaking, and Prize Oratory of Juniors and Sophomores.
- 11 June Meeting of Trustees, Phi Beta Kappa, Sigma Xi, Alumni.
- 12 June Commencement of Union College, the second Wednesday in June. President's reception, Union College.
- 13, 14 June Entrance examinations.
- 17 Sept. Registration Day for Freshmen, Union College.
- 18 Sept. Registration Day for Students other than Freshmen, Union College. Entrance Examinations, Union College.

University Calendar—Continued**1901**

- 19 Sept. First Chapel Exercises and Recitations, Entrance Examinations concluded.
- 20 Sept. Freshman Recitations begin.
- 21 Sept. Examination for conditioned students.
- 24 Sept. Winter term of Medical College begins.
- 7 Oct. The College of Pharmacy begins.
- 5 Nov. Election Day.
- 28 Nov. Thanksgiving Day. Recess four days.
- 7 Dec. Examination for conditioned students.
- 20 Dec. Fall term of Union College ends.

1902

- 2 Jan. Winter term of Union College begins.
- 6 Jan. Winter term of Medical College resumes.
- 23 Jan. Day of Prayer for Colleges.
- 21 Feb. Allison-Foote Prize Debate between the Literary Societies.
- 22 Feb. Washington's Birthday.
- 1 March Examination for conditioned students.
- 18 March Commencement of the College of Pharmacy.
- 21 March Winter term of Union College ends.
- 24 March Spring term of Union College begins.
- 8 June Sunday. Baccalaureate Sermon, Union College.
- 9 June Prize Contest in Extemporaneous Speaking, and Prize Oratory of Juniors and Sophomores.
- 10 June Meeting of Trustees, Phi Beta Kappa, Sigma Xi, Alumni.
- 11 June Commencement of Union College, the second Wednesday in June. President's reception, Union College.
- 12, 13 June Entrance Examinations, Union College.

UNION UNIVERSITY

Union University embraces the following institutions :

UNION COLLEGE.

ALBANY MEDICAL COLLEGE.

ALBANY LAW SCHOOL.

ALBANY COLLEGE OF PHARMACY.

DUDLEY OBSERVATORY.

Union College acquired by its charter granted in 1795, full University powers, but the creation of graduate institutions at Schenectady was not found practicable. Schools of Law and Medicine and also an Astronomical Observatory have long existed at Albany, only a few miles distant. The arrangement naturally suggested by these circumstances was, that the Professional Schools and the Observatory at Albany should be united with Union College, under the Charter and Board of Trustees of the latter. This was accordingly effected by the incorporation of Union University in 1873. The Albany College of Pharmacy was created by the Board of Governors, June 21, 1881, and incorporated as a Department of the University, August 21, of the same year.

The President of Union College and permanent Chancellor of Union University has the oversight of the University, each of the institutions having its resident Dean. The Dean of Union College acts in the place of the President in his absence, and also assists him in matters delegated to him by the President. The University Board of Governors is composed of permanent trustees of Union College, and of representatives of each of the other institutions embraced in Union University.

OFFICERS OF THE UNIVERSITY

President

ANDREW V. V. RAYMOND, D. D., LL. D.

Honorary Chancellor, 1900

HON. WHITELOW REID, LL. D.

Governors

ANDREW V. V. RAYMOND, D. D., LL. D.,
HON. AMASA J. PARKER, A. M.,
HON. D. CADY HERRICK,
HON. WILLIAM L. LEARNED,
HON. SIMON W. ROSENDALE,
JOHN F. RATHBONE, Esq.,
SAMUEL B. WARD, M. D., PH. D.,
WILLIAM J. WALKER, Esq.,
WILLIS G. TUCKER, M. D., PH. D.,
SILAS B. BROWNELL, LL. D.,
REV. WILLIAM IRVIN, D. D.,
HON. JUDSON S. LANDON, LL. D.,
HON. EDWARD W. PAIGE, LL. D.,
WILLIAM H. H. MOORE, A. M., LL. D.,
REV. DENIS WORTMAN, D. D.,
HON. JOHN H. STARIN,
HON. JOHN A. DE REMER, A. M.,
CLARK BROOKS, A. M.,
REV. GEORGE ALEXANDER, D. D.

UNIVERSITY FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

HENRY WHITEHORNE, LL. D.,
Nott Professor (No. 1) of the Greek Language and Literature.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature, and Lecturer on
Current History.

MAURICE PERKINS, A. M., M. D.,
Nott Professor (No. 3) of Analytical Chemistry.

ALBERT VANDER VEER, M. D., PH. D.,
Dean of the Medical Faculty and Professor of Didactic, Abdomi-
nal and Clinical Surgery.

JOHN M. BIGELOW, M. D., PH. D.,
Emeritus Professor of Materia Medica and Therapeutics.

HON. JUDSON S. LANDON, LL. D.,
Lecturer on Constitutional Law.

WILLIS G. TUCKER, M. D., PH. D., F. C. S.,
Registrar of the Medical College and Professor of Inorganic and
Analytical Chemistry and Toxicology.

WILLIAM HAILES, M. D.,
Anthony Professor of Pathological Anatomy, Embryology, His-
tology and Fractures and Dislocations.

Union University

SAMUEL B. WARD, M. D., PH. D.,

Professor of Theory and Practice of Medicine, and Hygiene.

JAMES P. BOYD, M. D.,

Professor of Obstetrics, Gynecology and Diseases of Children.

CYRUS S. MERRILL, M. D.,

Professor of Ophthalmology and Otology.

SIDNEY G. ASHMORE, A. M., L. H. D.,

Professor of the Latin Language and Literature.

FREDERIC C. CURTIS, M. D.,

Professor of Dermatology.

LEWIS BOSS, A. M.,

Director of Dudley Observatory.

ALFRED B. HUESTED, M. D., PH. G.,

Professor of Botany and Materia Medica.

GUSTAVUS MICHAELIS, PH. G.,

Professor of Pharmacy.

HENRY HUN, M. D.,

Professor of Diseases of the Nervous System.

SAMUEL R. MORROW, M. D.,

Professor of Anatomy and of Orthopædic and Operative Surgery.

JAMES R. TRUAX, A. M., PH. D.,

Professor of the English Language and Literature.

THOMAS W. WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK S. HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

BENJAMIN H. RIPTON, PH. D., LL. D.,
Dean of Union College and Professor of History and Sociology.

J. NEWTON FIERO, LL. D.,
Dean of the Law School and Professor of Procedure, Equity,
Torts.

JAMES W. EATON,
Professor of the Law of Evidence and of Contracts.

HON. SIMON W. ROSENDALE,
Lecturer on the Civil Law.

HON. ALTON B. PARKER,
Lecturer on Development of the Law.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

HERMAN CAMP GORDINIER, M. D.,
Professor of Physiology.

JAMES F. TRACEY,
Professor of the Law of Corporations.

WENDELL LAMOROUX, A. M.,
Librarian.*

*Emeritus

Union University

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

HON. ALBERT C. TENNANT,
Professor of Criminal Law and the Laws of Real and Personal
Property.

LEWIS R. PARKER,
Professor of the Law of Bailments.

HON. D. CADY HERRICK,
Lecturer on Municipal Corporations.

HON. IRVING G. VANN,
Lecturer on the Law of Insurance.

HON. ALDEN CHESTER,
Lecturer on the Federal Judicial System.

HOWARD VAN RENSSELAER, M. D.,
Professor of Materia Medica and Therapeutics.

SAMUEL B. HOWE, A. M., PH. D.,
Adjunct Nott Professor (No. 4), Principal of Union School,
Schenectady.

ALBERT H. PEPPER, A. M.,
Assistant Professor of Modern Languages.

JOSEPH D. CRAIG, M. D.,
Adjunct Professor of Anatomy.

WILLIS GOSS MACDONALD, M. D.,

Adjunct Professor of Surgery.

GEORGE BLUMER, M. D.,

Adjunct Professor of Histology, Pathology and Bacteriology.

HERMAN BENDELL, M. D.,

Clinical Professor of Otology.

THEODORE F. C. VAN ALLEN, M. D.,

Clinical Professor of Ophthalmology.

ANDREW MAC FARLANE, M. D.,

Adjunct Professor of Physical Diagnosis.

CLINTON BRADFORD HERRICK, M. D.,

Clinical Professor of Railway Surgery.

DE BAUN VAN AKEN, PH. G.,

Lecturer on Pharmacy.

HON. WALTER E. WARD,

Lecturer on the Law of Patents, Copyrights and Trade Marks.

HOWARD OPDYKE, A. B.,

Assistant Professor of Physics.

JOHN I. BENNETT, A. B.,

Assistant Professor of Greek.

ARTHUR JAY ROY, C. E., A. M.,

Assistant in Dudley Observatory.

JOHN V. HENNESSY, M. D.,

Adjunct Professor of Medical Jurisprudence and Physical
Diagnosis.

FLETCHER W. BATTERSHALL,
Professor of Elementary Law, and Domestic Relations.

FRANK RICHARDSON, PH. G.,
Instructor in Materia Medica and Director of the Pharma-
ceutical Laboratory.

LEO HAENDEL NEUMAN, M. D.,
Lecturer on Symptomatology and Diseases of the Stomach and
Intestines.

JESSE M. MOSHER, M. D.,
Lecturer on Insanity, and Neurology.

ARTHUR W. ELTING, M. D.,
Instructor in Surgery.

ARTHUR GUERNSEY ROOT, M. D.,
Clinical Professor of Diseases of the Throat and Nose.

WILLIAM OLIN STILLMAN, M. D.,
Lecturer on History of Medicine.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

ALVAH S. NEWCOMB,
Professor of the Statutes of New York.

GEORGE EMORY LOCHNER, M. D.,
Instructor in Obstetrics.

CHARLES HENRY MOORE, M. D.,
Instructor in Ophthalmology and Otology.

THOMAS WILLIAMS JENKINS, M. D.,
Instructor in Histology and Pathological Anatomy.

THOMAS ADDIS RYAN, M. D.,
Instructor in Surgery.

WILFRED SYLVESTER HALE, M. D.,
Instructor in Anatomy.

WILLIAM B. VARNUM, A. B.,
Assistant in Dudley Observatory.

CLEMENT F. THEISEN, M. D.,
Instructor in Diseases of the Throat and Nose.

LANSING B. WINNE, M. D.,
Instructor in Clinical Medicine.

JAMES M. MOORE, M. D.,
Instructor in Orthopædics.

HORACE T. EDDY, B. E. E., E. E.,
Instructor in Electrical Engineering.

CHARLES HARPER RICHARDSON, M. D.,
Instructor in Surgery.

HARRY JUDSON LIPES, M. D.,
Lecturer on Obstetrics.

JOHN LEWIS MARCH, A. M.,
Instructor in Modern Languages.

LINDSAY DUNCAN, B. S.,
Instructor in Mathematics, Drafting and Surveying.

THEODORE JAMES BRADLEY, PH. G.,
Instructor in Chemistry.

SPENCER LYMAN DAWES, M. D.,
Instructor in Theory and Practice of Medicine.

WILLIAM HENRY HAPPEL, M. D.,
Instructor in Therapeutics.

ARTHUR SAUTTER, M. D.,
Instructor in Dermatology.

WARREN HARKNESS EVERETT, M. D.,
Instructor in Embryology.

STEPHEN B. GRISWOLD,
Law School Lecturer on Books and Their Uses.

HERBERT L. TOWNE, A. B., M. D.,
Instructor in Physical Culture.

FRANK BLAIR WILLIAMS, C. E., PH. D.,
Instructor in Engineering.

JAMES WESLEY WILTSE, M. D.,
Instructor in Materia Medica.

HENRY LARNED KEITH SHAW, M. D.,
Instructor in Diseases of Children.

ALVAH HARRY TRAVER, M. D.,
Instructor in Surgery.

EDGAR ROSCOE STILLMAN, M. D.,
Instructor in Physiology.

EDGAR ALBERT VANDER VEER, M. D.,
Instructor in Surgery.

FRANK T. WRIGHT, PH. B.,
Assistant in Chemical Laboratory.

UNION COLLEGE

ACADEMIC DEPARTMENT OF

UNION UNIVERSITY

SCHENECTADY, N. Y.

UNION COLLEGE

Union College was incorporated by the Regents of the University of the State of New York, on the 25th day of February, 1795. It was the second college incorporated in the State, and the first north of the city of New York and west of the Hudson River. It received its name from the circumstance that several religious denominations co-operated in its organization, and was the first college in the United States which was not of a strictly denominational character. It has continued from its foundation to be the representative institution of Christian unity.

The first president of Union College was the Rev. John Blair Smith, of Philadelphia. He was elected in 1795, and resigned in 1799, only a few months before his death. He was succeeded by Jonathan Edwards, the younger, who died in 1801. The Rev. Jonathan Maxcy, previously president of Brown University, succeeded Dr. Edwards, and resigned at the end of two years. In 1804, the Rev. Eliphalet Nott was elected president of Union College, which office he held until his death, on the 29th day of January, 1866. The Rev. Laurens P. Hickok, a graduate of the College, who had long acted as vice-president, was elected his successor. He resigned in 1868. The Rev. Charles A. Aiken succeeded Dr. Hickok in 1869, and resigned in 1871. The Rev. Eliphalet Nott Potter was elected president in 1871, and inaugurated June 20, 1872. On his resignation, in 1884, the Hon. Judson S. Landon, LL. D., was appointed president *ad interim*, and served until the inauguration of Harrison E. Webster, LL. D., who was elected president May 23, 1888, and inaugurated June 26, 1888. On his resignation in January, 1894, Rev. Andrew V. V. Raymond, D. D., LL. D., was elected president and inaugurated in June, 1894.

OFFICERS OF UNION COLLEGE

Trustees

Ex-Officio.	{	<p>HIS EXCELLENCY BENJAMIN B. ODELL, JR., Governor.</p> <p>HON. TIMOTHY L. WOODRUFF, Lieut.-Governor.</p> <p>HON. JOHN T. McDONOUGH, Secretary of State.</p> <p>HON. ERASTUS C. KNIGHT, Comptroller.</p> <p>HON. JOHN P. JAECKEL, Treasurer.</p> <p>HON. JOHN C. DAVIES, Attorney-General.</p>
-------------	---	--

SILAS B. BROWNELL, LL. D., 71 Wall street, New York.

REV. WILLIAM IRVIN, D. D., New York.

HON. JUDSON S. LANDON, LL. D., Schenectady.

HON. EDWARD W. PAIGE, LL. D., New York.

WM. H. H. MOORE, A. M., LL. D., 51 Wall street, New York.

REV. DENIS WORTMAN, D. D., Saugerties.

HON. JOHN H. STARIN, Pier 18, N. R., New York.

HON. JOHN A. DE REMER, A. M., Schenectady.

CLARK BROOKS, A. M., 54 William street, New York.

REV. GEORGE ALEXANDER, D. D., 10th street and University place, New York.

HON. WARNER MILLER, LL. D., Herkimer.

NICHOLAS V. V. FRANCHOT, A. M., Olean, N. Y.

WILLIAM B. RANKINE, A. M., Niagara Falls.

HON. DANIEL S. LAMONT, 35 Wall street, New York.

EDGAR S. BARNEY, A. M., 36 Stuyvesant street, New York,
term of office expiring June, 1901.

REV. PHILIP H. COLE, A. M., Syracuse, N. Y., term of office
expiring June, 1902.

GEN. DANIEL BUTTERFIELD, 616 Fifth avenue, New York,
term of office expiring June, 1903.

EDWARD P. WHITE, A. M., Amsterdam, N. Y., term of office
expiring June, 1904.

Finance Committee

HON. JUDSON S. LANDON, LL. D.	HON JOHN H. STARIN
HON. JOHN A. DEREMER, A. M.	CLARK BROOKS, A. M.
W. H. H. MOORE, A. M., LL. D.	
HON. NICHOLAS V. V. FRANCHOT, A. M.	
WILLIAM B. RANKINE, A. M.	

Instruction Committee

REV. GEORGE ALEXANDER, D. D.	
HON. SILAS B. BROWNELL, LL. D.	
EDGAR S. BARNEY, A. M.	REV. PHILIP H. COLE, A. M.

Treasurer

GILBERT K. HARROUN, ESQ.

Secretary

CLARK BROOKS, A. M.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

HENRY WHITEHORNE, LL. D.,
Nott Professor (No. 1) of the Greek Language and Literature.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature, and Lecturer on
Current History.

MAURICE PERKINS, A. M., M. D.,
Nott Professor (No. 3) of Analytical Chemistry.

SIDNEY G. ASHMORE, A. M., L. H. D.,
Professor of the Latin Language and Literature.

JAMES R. TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS W. WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK S. HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

BENJAMIN H. RIPTON, PH. D., LL. D., DEAN,
Professor of History and Sociology.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

WENDELL LAMOROUX, A. M.,
Librarian.*

*Emeritus.

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

ALBERT H. PEPPER, A. M.,
Assistant Professor of Modern Languages.

HOWARD OPDYKE, A. B.,
Assistant Professor of Physics.

JOHN I. BENNETT, A. B.,
Assistant Professor of Greek.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

SAMUEL B. HOWE, A. M., PH. D.,
Adjunct Nott Professor (No. 4), Principal of Union School.

HORACE T. EDDY, B. E. E., E. E.,
Instructor in Electrical Engineering.

JOHN LEWIS MARCH, A. M.,
Instructor in Modern Languages.

LINDSAY DUNCAN, B. S.,
Instructor in Mathematics, Drafting and Surveying.

HERBERT L. TOWNE, A. B., M. D.,
Instructor in Physical Culture.

FRANK BLAIR WILLIAMS, C. E., M. S., PH. D.,
Instructor in Engineering.

FRANK T. WRIGHT, PH. B.,
Assistant in Chemical Laboratory.

COLLEGE OFFICERS

GILBERT K. HARROUN,
Treasurer.

WENDELL LAMOROUX, A. M.,
Librarian Emeritus.

PETER NELSON, A. B.,
Acting Librarian.

JAMES H. STOLLER, PH. D.,
Curator of the Museum.

MRS. M. L. PEISSNER,
Registrar.

HERBERT L. TOWNE, M. D.,
Director of Gymnasium.

R. T. Mc CORD,
Accountant and President's Secretary.

GEORGE CLUTE,
Superintendent of Grounds and Buildings.

Standing Committees of the Faculty

EDUCATION.—Professors Ripton, Whitehorne, Wells, Perkins, Ashmore, Truax, Wright, Hoffman, Landreth, Hale, Stoller and Opdyke.

LIBRARY.—Professors Wright, Hale and Jones.

CATALOGUE.—Professors Ripton, Bennett and Opdyke.

SCHOLARSHIPS.—Professors Ripton, Pepper and Bennett.

STAGE APPOINTMENTS.—Professors Wright and Stoller, and Mr. Duncan.

ATHLETICS.—Professors Opdyke and Perkins, and Dr. Towne.

RULES.—Professors Ashmore, Wright and Hoffman.

SENIOR CLASS.—Professors Hoffman and Stoller, and Dr. Williams.

JUNIOR CLASS.—Professors Hale and Bennett, and Mr. Eddy.

SOPHOMORE CLASS.—Professors Truax and Jones, and Mr. March.

FRESHMAN CLASS.—Professors Pepper and Opdyke, and Mr. Duncan.

PREPARATORY SCHOOLS.—Professors Pepper, Bennett, Opdyke and Jones, and Messrs. Eddy, March, Duncan, Towne and Williams.

ADMISSIONS.—Professors Ripton, Truax, Ashmore, Wright, Stoller, Pepper and Bennett.

STUDENTS

Abbreviations

c, A. B. course; *s*, B. S. course; *g e*, B. E. course in General Engineering; *s e*, B. E. course in Sanitary Engineering; *e e*, B. E. course in Electrical Engineering; *ls*, Ph. B. course; N. C., North College; S. C., South College.

Seniors. Class of 1901

- ee* ROY EDWIN ARGERSINGER... *Johnstown*.....21 S. C.
c HENRY SAMES BÄHLER..... *Schenectady*, 31 Park Ave.
c HARRY ALVIN BARRETT.....*Troy*.....8 S. C.
ge CHARLES JOSEPH BENNETT...*Amsterdam*..BΘΠ House
ge LEWIS S. BENTON.....*Phelps*.....77 N. C.
c HORATIO JONES BROWN.....*Schenectady*,
12 N. Church St.
c JAMES WALTON CHEESBOROUGH, *Biltmore*, N. C.,15 S. C.
c JOSEPH HARVEY CLEMENTS, JR., *Schenectady*,
502 Hamilton St.
c JOHN HAWLEY COOK.....*Albany*.....ΦΓΔ House
c ARTHUR SPENCER GOLDEN....*Rensselaerville*, XΨ Lodge
c GARDINER KLINE.....*Amsterdam*..AΔΦ House
ls JOHN LUDDEN.....*Troy*.....ΦΔΘ House
c JOHN McNAB.....*Schenectady*, 13 Romeyn St.
ls PORTER LEE MERRIMAN.....*Albany*.....ΨΥ House
s JAMES WADSWORTH MILLER, JR., *Johnstown*....9 S. C.
s LEOPOLD MINKIN.....*Albany*.....25 S. C.
s SAMUEL JUDSON NEFF.....*Port Leyden*....44 S. C.

- s* JOHN E. PARKER.....*Georgetown, S. C., 73 N. C.*
c GEORGE LEROY SHELLEY....*Amsterdam...Φ Δ Θ House*
c EARL BROWN SLACK.....*Groton.....B Θ Π House*
ee LEVI LEWIS SUMERISKI.....*Fairport.....87 N. C.*
ls WELLINGTON EUGENE VAN WORMER, *Middleburgh,*
B Θ Π House
c CHARLES PORTER WAGONER..*Albany.... A Δ Φ House*
ee RICHARD FRANCHOT WARNER, *Rochester.....78 N. C.*
ls LEROY J. WEED.....*Binghamton...Ψ Υ House*
c THOMAS HERBERT WIGHT...*Andes.....48 S. C.*
 Seniors, 26.

Juniors. Class of 1902

- c* WILLIAM HOOPER ADAMS...*Charleston, S. C., 58 N. C.*
e ARCHIBALD LAMON ANDERSON, *Ballston Spa...93 N. C.*
c EVERETT J. BEST.....*Elk Creek...13 Landon Terrace*
ls LESTER W. BLOCH.....*Albany.....B Θ Π House*
s HERBERT C. BOTHWELL.....*Albany.....Ψ Υ House*
e JOHN PATRICK CARVER,.....*Westport.....85 N. C.*
e H. BURDETT CLEVELAND.....*Amsterdam.....96 N. C.*
s DANIEL VEDDER CLUTE.....*Schenectady, 4 Nott Terrace*
e THEODORE DEL. COFFIN.....*Glens Falls.....69 N. C.*
c WALTER ALLEN COWELL....*Albany.....90 N. C.*
c HARRY LAURENS CRAIN....*Marathon...A Δ Φ House*
c RAYMOND R. CRIM.....*Middleville....X Ψ Lodge*
ls JAMES E. FINEGAN.....*Beekmantown....21 S. C.*
c WILLIAM HUGH GILLESPIE..*New Brighton, S. I.,*
X Ψ Lodge

- c* DICKINSON EARNEST GRIFFITH, *Watertown*, Φ Δ Θ House
ls JOHN DENNETTE GUTHRIE...*Smithville, Va.*...72 N. C.
e GEORGE HACKETT*Utica*...6 Quackenbos St.
c NEILSON C. HANNAY.....*Rynex Corners*...31 S. C.
c DONALD CARLTON HAWKES..*Elmira*Ψ Υ House
c WALTER ENNIS HAYS.....*Albany*.....Φ Δ Θ House
ls ADDISON HOTALING HINMAN, *Albany*.... A Δ Φ House
e ROBERT BRUCE HOADLEY....*Binghamton*, A Δ Φ House
e HARRY C. HOYT*Kalamazoo, Mich.*,
A Δ Φ House
ls EVERETT TURNER MALLERY...*Middleburgh*.....21 S. C.
c FRASER METZGER.....*Freehold*.....29 S. C.
c FRANK WATKIN NEARY....*Cohoes*Φ Γ Δ House
e GEORGE ISRAEL OAKLEY....*East Williston*...92 N. C.
c FRANK TAYLOR OSTRANDER..*Albany*X Ψ Lodge
s HOWARD MARSHFIELD PARSONS, *Batavia*..So. Colonnade
s ARTHUR SHELDON RAYMOND..*Lincoln, Neb.*, A Δ Φ House
c JOSEPH MILTON RUSSUM....*Schenectady*.....9 S. C.
ls HOWARD EMMETT SANDS....*Jordan*Φ Γ Δ House
e DAVID JOSEPH SHAW.....*Auburn*.....91 N. C.
e JAMES H. SMALL, JR.....*Charleston, S. C.*...73 N. C.
c ARTHUR LONSON SOUTH....*Birchton*....9 Park Place
ls FRANK LAURENCE STILES...*Lansingburgh*..Ψ Υ House
e FENWICK M. THEBO.....*Fort Edward*....89 N. C.
e HARRY REEVES WILSON.....*Albany*.....74 N. C.
c GILBERT SYLVESTER WOOLWORTH, *Watertown*, Φ Δ Θ House
ls ROBERT CHAUNCEY YATES...*Schenectady*, 514 State St.
s WILLARD STUART YATES....*Lincoln, Neb.*, A Δ Φ House
 Juniors, 41.

Sophomores. Class of 1903

<i>gr s</i>	FREDERICK JANSON BALZ....	<i>Amsterdam</i>	63	N. C.
<i>c</i>	ROBERT FINNEY BARRETT....	<i>Troy</i>	8	S. C.
<i>s</i>	ARTHUR ERNEST BISHOP....	<i>Oneonta</i>	Φ Δ Θ	House
<i>c</i>	MORRIS BLOCH.....	<i>Albany</i>	B Θ Π	House
<i>c</i>	JOHN ALBERT BOLLES.....	<i>Kortright</i>	54	N. C.
<i>ls</i>	GUERNSEY J. BORST.....	<i>Seward</i>	62	N. C.
<i>s</i>	JOSEPH R. BROWN, JR.....	<i>Seward</i>	Φ Γ Δ	House
<i>ls</i>	MOREY CHARLES COLLIER....	<i>Savona</i>	Φ Γ Δ	House
<i>c</i>	FRANK H. DALEY.....	<i>Coxsackie</i> , 25	Lafayette St.	
<i>c</i>	THOMAS G. DELBRIDGE.....	<i>Batavia</i>	76	N. C.
<i>e</i>	WILLIAM JAY DICKENSON...	<i>Flycreek</i>	58	N. C.
<i>c</i>	GEORGE WILLIAM DONNAN..	<i>Troy</i>	6	High St.
<i>c</i>	RAYMOND CURTIS DONNAN..	<i>Troy</i>	6	High St.
<i>ls</i>	JOSEPH GEORGE FENSTER....	<i>Troy</i>	47	S. C.
<i>e</i>	LAURENCE J. GALLAGHER....	<i>Troy</i>		Troy
<i>ls</i>	ERNEST ECKERT GILLETTE....	<i>Albany</i>		Albany
<i>ls</i>	NORMAN NORTON GOULD....	<i>Penn Yan</i>	22	S. C.
<i>s</i>	GUY BROWN GRISWOLD.....	<i>Whitehall</i>	Φ Γ Δ	House
<i>ls</i>	JAMES Q. GULNAC.....	<i>Binghamton</i>	9	S. C.
<i>s</i>	CLINTON BENJAMIN HAWN..	<i>Albany</i>	Φ Δ Θ	House
<i>ls</i>	R. FENTON HOWE.....	<i>Poland</i>	X Ψ	Lodge
<i>c</i>	SAMUEL B. HOWE, JR.....	<i>Schenectady</i> ..	A Δ Φ	House
<i>ls</i>	HERBERT G. HOXIE.....	<i>Cambridge</i> ...	X Ψ	Lodge
<i>c</i>	EUSTACE HULSAPPLE.....	<i>Watervliet</i> ...	Ψ Υ	House
<i>gr s</i>	LOUIS TIFFANY HUNT.....	<i>Ephratah</i>	30	S. C.
<i>s</i>	ALBERT HENRY KESSLER....	<i>Schenectady</i> , 220	Union St.	
<i>e</i>	CARL RODERIC KRUEGER...	<i>Schenectady</i> , 211	Liberty St.	

s	WALTER EDISON KRUESI.....	Schenectady, 16 Union St.
ls	ARCHIBALD ALLEN LEE.....	Albany.....A Δ Φ House
e	OTIS F. LEWIS.....	Gilboa..North Colonnade
e	JAMES FRANKLIN MORGAN..	Fort Edward....41 N. C.
e	FRANCIS JAMES MULVANEY..	Worcester.....41 S. C.
e	GLOWACKI PARKER.....	Batavia.....78 N. C.
c	HENRY ARTHUR PEARCE.....	Plainfield, N. J., 22 S. C.
e	ARTHUR DANIEL PECK.....	Cooperstown.....59 N. C.
ls	ALLEN STEELE PECK.....	Batavia.....70 N. C.
e	ARTHUR GUY PICKENS.....	Cooperstown, Φ Δ Θ House
ls	FREDERIC H. POWELL.....	Worcester.....54 N. C.
e	WILLIAM RICHARD PRITCHARD,	Bluffton, S. C., 73 N. C.
e	LAFAYETTE CLOW REYNOLDS..	Fonda.....15 Close St.
s	EDWARD HOLLAND RIDER....	Unadilla.....30 S. C.
c	BERT WILLIAM ROY.....	Clyde.....25 S. C.
ls	LOUIS F. SCHROEDER.....	Port Leyden, Φ Γ Δ House
s	JOHN LEOPOLD STAEBER.....	Lancaster.....41 S. C.
ls	THOMAS RICHARD TILLOTT, JR.,	Auburn..228 Union St.
c	GORDON EMMONS VAN LOON,	Coxsackie,
		25 Lafayette St.
s	GEORGE WALRATH.....	St. Johnsville....26 S. C.
e	JUDSON T. WELLS.....	Amsterdam.....14 S. C.
	Sophomores, 48.	

Freshmen. Class of 1904

ls	HERBERT DOD ALLTER.....	St. Johnsville, A Δ Φ House
e	HARRY R. ANDRESS.....	Gansevoort.....59 N. C.
c	FRANK RUDD ANDREWS.....	Yonkers... X Ψ Lodge
e	MICHEL IBRAHIM ATIAH...	Beirut, Syria....63 N. C.

- c* JAMES ALEXANDER BARKLEY, *Argyle*.....34 Park Ave.
c WALTER EDWARD BEADLE....*Cooperstown*....57 N. C.
s ARTHUR LEE BENNING.....*Clyde*.....25 S. C.
s DONALD OERNST BOUDEMAN, *Kalamazoo, Mich.*,
A Δ Φ House
s HARRY NEWMAN BOWLER...*Amsterdam*..B ⊕ II House
e CHARLES GEORGE BRAND....*Elmira*..103 Nott Terrace
c CLAUDE NORTON BROWN.....*Barnerville*.....64 N. C.
s WILLIAM BERTRAM BUTTS...*Albany*.....9 High St.
ls JOHN BARRATT CHILSON...*Luzerne*..305 Germania Ave.
c ROBERT WILSON CLARK.....*Amesbury, Mass.*,
A Δ Φ House
e WILLIAM GIDEON CLOSSON...*Gloversville*.....30 S. C.
e PETER DIBBLE CONINE.....*Cooperstown*....61 N. C.
ls LOUIS JOSEPH CONWAY.....*Troy*..177 First St., Troy
s JOSEPH GILBERT COOL.....*Glens Falls*.....71 N. C.
c THADDEUS GUILFORD COWELL, *Albany*.....90 N. C.
e WALTER GEORGE CRAIG.....*Plattsburgh*...Ψ Υ House
e WILLIAM WOOLSEY CRONKHITE, *Fort Edward*..89 N. C.
e CLARENCE RAYMOND DARBY, *Rochester*.....13 S. C.
e SAMUEL RANDALL DAVENPORT, *Albany*.....Ψ Υ House
c J. LEWI DONHAUSER.....*Albany*.....Φ Δ ⊕ House
e FRANK HENRY DREES.....*Carroll, Ia.*....X Ψ Lodge
ls STEPHEN CALKIN FIERO....*Katsbaan*.....6 High St.
e HOWARD RAYMOND GLUTZBECK, *Bay Shore, L. I.*, 68 N. C.
e ROBERT GORDON.....*Idlewild*...149 Barrett St.
s JOHN GARSIDE GREEN.....*Cohoes*.....A Δ Φ House
ls EDWARD DOUGLAS GREENMAN, *Albany*.....X Ψ Lodge
ls WILLIAM HENRY GUARDENIER, *East Springfield*,
Φ Δ ⊕ House

- c* SEYMOUR HANDY.....*St. Johnsville*.....26 S. C.
ls JOSEPH FRIEND HARRIS.....*Albany*.....B © II House
c CORNELIUS LANSING HAYS.. *Albany*.....Φ Δ © House
s CHARLES EDWIN HEATH....*Slingerlands*...Ψ Υ House
e BENJAMIN HUFF.....*Tonawanda*..B © II House
e LELAND WESLEY IRISH.....*Caldwell*.....58 N. C.
e ROBERT HOYT JOHNSTON....*Port Leyden*..Φ Γ Δ House
e ALFRED JOHN KAUFMAN....*Rensselaer*, 10 Nott Terrace
e HENRY JOSEPH LANGLOIS....*Plattsburgh*.....17 S. C.
ls GULIAN LANSING.....*Schenectady*, 940 State St.
c JAMES FULLER LAWSING....*Schenectady*,
405 Lafayette St.
ls ANDREW WRIGHT LENT.....*Highland*,
19 University Place
ls LUKE FRANCIS LOVELOCK...*Troy*.....46 S. C.
e BENJAMIN JULIUS LOWENSTEIN, *Amsterdam*...14 S. C.
e GEORGE CLYMER MACFARLANE, *Towanda, Pa.*,
A Δ Φ House
ls JOHN ALOYSIUS MAHAR.....*Rensselaer*,
10 Nott Terrace
e CHARLES DUPLESSIS MATTHEWS, *Albany*.....45 S. C.
c CARL ESSELSTYN MCCOMBS..*Frankfort*.....X Ψ Lodge
e SABAS MENESES.....*Santiago, Cuba*...62 N. C.
e JAMES EDWARD MOLONY....*Schenectady*, 816 State St.
e ELBERT VERITY MULLENNEAUX, *Albany*.....Ψ Υ House
s HALLET MORTON MURPHY..*Chicago, Ill.*,
103 Nott Terrace
s HENRY SEYMOUR OLMSTED..*Chattanooga, Tenn.*,
Φ Γ Δ House
c SAMUEL DIMOCK PALMER...*Ogdensburg*..A Δ Φ House

c	JOHN FAY PUTNAM.....	Johnstown.....	13	S. C.
s	ELBERT THEODORE RULISON, JR.,	Schenectady,		
		124 Lafayette St.		
s	ARCHIBALD HAMILTON RUTLEDGE,	Santee, S. C.,	73	N. C.
e	HENRY COOK SALMOND, JR.,	Camden, S. C....	74	N. C.
e	GEORGE VAUGHN SHERRILL..	Sandy Hill....	ΨΥ	House
ls	GEORGE EARL SMITH.....	Schenectady,		
		349 Romeyn St.		
ls	CHARLES GOWDY STILES.....	Lansingburgh..	ΨΥ	House
ls	WILLIAM CARL TREDER.....	Albany.....	B @ Π	House
c	LEWIS SNELL VOSLER.....	St. Johnsville....	29	S. C.
e	WINSLOW BARNES WATSON..	Plattsburgh....	79	N. C.
e	HARRY ROGERS WICKHAM...	South Bethlehem,		
		61 N. C.		

Freshmen, 66.

Irregular Students

('03 e)	CURTIS DANIEL BUNTING,	Hamburg....	ΨΥ	House
('03 s)	LEROY NELSON TAYLOR,	Gloversville....	26	S. C.
('03 e)	DEFOREST WILLIAMS WEED,	Binghamton	ΨΥ	House
	Irregular Students,	3.		

Summary of Students

Seniors.....	26
Juniors.....	41
Sophomores.....	48
Freshmen.....	66
Irregular Students.....	3
Total.....	184

COURSES OF STUDY

1.—Course leading to the degree of A. B.

This is the usual classical course. Latin and Greek are required for two years and are elective for the remainder of the course. French and German are included in addition to the ancient languages.

2.—Course leading to the degree of Ph. B.

This course offers Latin without Greek for which is substituted additional work in modern languages and science.

3.—Course leading to the degree of B. S.

This course is based upon the study of mathematics and the sciences, with extended work in English and other modern languages.

In courses 1, 2, and 3 the greater part of the work of the last two years is elective.

4.—General course leading to the degree of B. E.

This course is intended to give the basis of an Engineering education, including the fundamental principles of all special branches of the profession, a knowledge of both French and German, and a course in English.

5.—Sanitary course leading to the degree of B. E.

This differs from course 4 in substituting special work in Sanitary Engineering for some of the General Engineering studies.

6.—Electrical course leading to the degree of B. E.

This differs from course 4 in substituting special work in Electricity and its applications, in place of some of the General Engineering studies.

Students having the profession of Medicine in view are permitted to take the first year studies of the Albany Medical College as a substitute for the studies of the first two terms of the Senior year in Union College. This enables medical students to lessen the time of their academic and professional studies by one year.

For tuition charges, see page 86.

ADMISSION

General Conditions

The regular entrance examinations are held on Thursday and Friday immediately following Commencement; and on the Tuesday, Wednesday and Thursday of the first week of the Fall term as indicated in the calendar; also, at the opening of any term. Special provision will be made, on application, for June entrance examinations to be held in other places to suit the convenience of applicants.

Candidates must be at least sixteen years old, and, as a preliminary to the entrance examinations they must, on the first day set for examinations, (see p. 42,) present to the President satisfactory testimonials of character, and register for the necessary examinations.

Candidates from other colleges must bring letters of honorable dismission, and must pass satisfactory examinations, or present acceptable certificates.

Candidates for a degree must enter before the close of the first Senior term.

All candidates will be examined in the English requirements, but in other subjects, Regents' diplomas or certificates from schools approved by the Faculty, will be accepted so far as they cover the above requirements. Blank certificates, to be filled out by principals of schools, will be furnished upon application to the Dean. Candidates are requested to take, if possible, the uniform entrance examinations offered by the Association of Colleges and Preparatory Schools for the Middle States and Maryland. Information concerning the time and place for these examinations can be obtained by writing to Prof. Nicholas Murray Butler, Columbia University, New York city.

Candidates for any other than the Freshman class are examined also in all studies previously pursued by that class.

Requirements for Examination in 1901

I. A. B. COURSE

Candidates for admission to the course leading to the degree of A. B. will be examined in the following subjects:

I.—ENGLISH.

All candidates for admission to the Freshman class will be required to pass a written examination in English, and no candidate will be admitted whose work is seriously defective in spelling, punctuation, grammar, or division into paragraphs.

Questions will be set on topics and extracts drawn from the following books. The first list consists of works to be read carefully with a view to the absorption of the subject matter, *i. e.*, as books are generally read. The second list consists of books to be read with critical care, in annotated editions, and with reference to dictionary, grammar and rhetoric. The questions on this set will relate to literary form and logical structure as well as to substance.

LIST (1) FOR GENERAL READING.

Scott's "Ivanhoe," Pope's "Iliad," Books I., VI., XXII., and XXIV.; "The Sir Roger de Coverley Papers" in the "Spectator;" Goldsmith's "Vicar of Wakefield;" Cooper's "Last of the Mohicans;" Tennyson's "Princess;" Coleridge's "Ancient Mariner;" Eliot's "Silas Marner;" Shakespeare's "Merchant of Venice."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Burke's "Speech on Conciliation with America;" Macaulay's "Essay on Milton" and "Essay on Addison;" Milton's Minor Poems, "Lycidas," "Comus," "L'Allegro," "Il Penseroso."

Attention is called to the fact that while no examination in grammar or rhetoric, as such, will occur, yet a knowledge of the essential principles of grammar and of the elementary principles of rhetoric is involved in the above requirements.

The practice of frequently writing brief compositions on themes drawn from the foregoing lists is recommended as a very helpful feature of the preparation; and instructors are urged to lay stress on the importance of correctness and effectiveness of expression.

2.—MATHEMATICS.

Arithmetic; Algebra, through Quadratics; Plane Geometry.

In Arithmetic the examination will be on the following subjects: factors and multiples, common and decimal fractions, square root, the more important tables and operations of denominate numbers, percentage and simple interest, compound interest for integral periods only, bank discount, stocks and bonds, and the metric system.

In his preparation in Algebra, the candidate should give special attention to factoring, fractional exponents and radicals, and the solution of quadratic equations by factoring and by the formula resulting from the solution of the equation $ax^2+bx+c=0$.

3.—LATIN.

(a) Latin Grammar and Latin Composition (Daniell's "Exercises in Latin Composition," or an equivalent); four books of Cæsar's Gallic War, or Arrowsmith and Whicher's "First Latin Readings" (preferred); six books of Vergil's *Æneid*; six orations of Cicero; two thousand lines of Ovid, or Sallust's *Catiline*; the "Roman Method" of pronunciation.

The Grammars of Bennett, Allen and Greenough, Harkness, and Gildersleeve-Lodge are recommended.

(b) Roman History, including Ancient Geography.

4.—GREEK.

(a) Goodwin's Greek Grammar; Xenophon's *Anabasis*, four books; Homer's *Iliad*, three books.

(b) Greek History, including Ancient Geography.

[The attention of instructors is particularly directed to the student's need of a full and accurate knowledge of the Greek and the Latin Grammar. Deficiency in this knowledge will prevent admission.]

5.—HISTORY OF THE UNITED STATES.

6.—MODERN GEOGRAPHY.

7.—PHYSIOLOGY.

II. PH. B. COURSE

Candidates for admission to the Freshman class in the course leading to the degree of Ph. B. will be examined in the following subjects:

1.—ENGLISH, as for the A. B. Course, page 36.

2.—MATHEMATICS, as for the A. B. Course, page 37.

3.—LATIN, as for the A. B. Course, page 37.

4.—FRENCH or GERMAN, at the option of the candidate, until 1902, when the requirement will be in German only, as stated on page 39.

IN FRENCH.—

A knowledge of grammar, implying familiarity with the following topics:

Inflection of nouns and adjectives in gender and number, the partitive constructions, the use of pronouns, especially the forms and positions of personal pronouns; the conjugation of regular and of the more usual irregular verbs; the use of moods and tenses, government of infinitives, and ordinary idioms.

Ability to translate at sight easy French prose into English, and simple English sentences into French. The can-

didate must have read concurrently with the work in the grammar, at least 200 pages of prose and poetry from various standard authors.

IN GERMAN.—

A knowledge of grammar, comprising declension of nouns, adjectives and pronouns; conjugation of verbs; the simpler rules of syntax and word-order.

Ability to translate at sight a passage of easy German prose, a vocabulary of the less usual words being given; and to convert simple English sentences into German. The candidate must have read, concurrently with the work in the grammar, at least 100 pages of prose and poetry from various standard authors.

5.—HISTORY OF THE UNITED STATES.

6.—MODERN GEOGRAPHY.

7.—PHYSIOLOGY.

III. B. S. COURSE

Candidates for admission to the Freshman class in the course leading to the degree of B. S. will be examined in the following subjects.

1.—ENGLISH, as for the A. B. Course, page 36.

2.—MATHEMATICS, as for the A. B. Course, page 37.

3.—ADDITIONAL MATHEMATICS.

(a) SOLID GEOMETRY.

(b) PLANE TRIGONOMETRY.

4.—FRENCH OR GERMAN, as for the Ph. B. Course; or
LATIN, as for the A. B. Course, pages 37, 38, 39.

5.—HISTORY OF THE UNITED STATES.

6.—MODERN GEOGRAPHY.

7.—PHYSIOLOGY.

IV., V. and VI. B. E. COURSES

Candidates for admission to the Freshman class in any of the courses leading to the degree of B. E. will be examined in the same subjects that are required for admission to the B. S. Course, page 39.

Requirements for Examination in 1902

IN PHYSICS.

FOR ADMISSION TO THE B. S. AND B. E. COURSES.

An elementary knowledge of Physics, such as may be gained by a year's course of study covering Mechanics, Sound, Heat, Light and Electricity. Preparation should include individual laboratory work, attested by a note-book, comprising at least thirty-five exercises, chiefly quantitative.

For recitation work Gage's "Elements of Physics" is recommended as a text-book.

IN MODERN LANGUAGES.

FOR ADMISSION TO THE PH. B., B. S. AND B. E. COURSES.

The requirement will be in German, instead of French or German.

Requirement is stated on page 39 of catalogue.

IN ENGLISH IN ALL COURSES.

LIST (I) FOR GENERAL READING.

Shakespeare's "Merchant of Venice;" Pope's "Homer's Iliad," books I., VI., XXII. and XXIV.; Addison's "The Sir Roger de Coverley Papers" from "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Rime of the Ancient Mariner;" Scott's "Ivanhoe;" Cooper's "The Last of the Mohicans;" Tennyson's "The Princess;" George Eliot's "Silas Marner;" Lowell's "Vision of Sir Launfal."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's "Essays on Milton and Addison."

All other requirements as in 1901.

Requirements for Examinations in 1903

IN GERMAN.

IN PH. B., B.S. AND B. E. COURSES.

A knowledge of grammar, comprising declension of nouns, adjectives and pronouns; conjugation of verbs; the simpler rules of syntax and word-order.

Ability to translate at sight a passage of easy German prose, a vocabulary of the less usual words being given; and to convert simple English sentences into German. The candidate must have read, concurrently with the work in the grammar, at least 300 pages of prose and poetry from various standard authors. In most cases two years' work will be necessary to meet this requirement.

IN ENGLISH IN ALL COURSES.

LIST (1) FOR GENERAL READING.

Shakespeare's "The Merchant of Venice" and "Julius Cæsar;" "The Sir Roger de Coverley Papers" in "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Ancient Mariner;" Scott's "Ivanhoe;" Carlyle's "Essay on Burns;" Tennyson's "The Princess;" Lowell's "The Vision of Sir Launfal;" George Eliot's "Silas Marner."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's "Essays on Milton and Addison."

All other requirements as in 1902

ENTRANCE EXAMINATIONS

1901

Thursday, Friday, June 13, 14.

Tuesday, Wednesday, Thursday, September 17-19.

Candidates will present their credentials at the office of the President at 10 A. M. on the first day and register for examination.

Only those who register on the first day will be admitted to the examinations of the following days.

SCHEDULE OF EXAMINATIONS

First day, Spring; Second day, Fall.

9 A. M. Arithmetic.	11 A. M. Algebra.	2. P. M. U. S. History.
Geography.		3 P. M. English.
Physiology.		

Second day, Spring; Third day, Fall.

9 A. M. Latin.	11. A. M. German.	2. P. M. Greek.
Solid Geometry.	French.	Plane Geometry.
		Plane Trigonometry.

DEPARTMENTS OF INSTRUCTION

The Greek Language and Literature

PROFESSOR WHITEHORNE AND ASSISTANT PROFESSOR BENNETT.

The course of instruction in this department extends through the Freshman and Sophomore years. The object kept constantly in view throughout the course is not merely to teach so many works of an unknown tongue, but to instruct and educate the pupil by a system of mental training grounded upon the works of the most noble poets, dramatists, historians and philosophers of the ancient world. To this end the pupil is taught not only to translate into accurate and idiomatic English, to analyze with great care the grammatical construction and to compare it with that of his own tongue, but especially to obtain a thorough knowledge and critical appreciation of the authors selected for his use.

Although there must be a general uniformity in the order in which different authors are read, yet no particular works are assigned to the several terms. The proficiency of each class determines the character of the book to be read. Furthermore, an opportunity is offered to students of the two upper classes to continue their studies in this department, by assigning to them for the three terms of the Junior and Senior years respectively, two hours per week of elective work in Greek. It is not thought advisable to limit any particular subject to any one term; but, as the need of the student is made plain, the attempt will be made to satisfy it. The works presented for consideration are in general these: Greek tragedy; several Dialogues of Plato; The History of Thucydides; The Orations of Demosthenes; The Gospels, The Acts of the Apostles and the Epistles of the New Testament.

The Latin Language and Literature

PROFESSOR ASHMORE.

The Freshman and Sophomore studies in this department are prescribed in the A. B. and Ph. B. courses. The Junior and Senior courses are elective. The following programme is in-

tended to indicate the general scope of the work of the four classes. Equivalents may be substituted at the discretion of the head of the department.

Freshman Year

1. **Livy:** Books I, XXI (Greenough and Peck, or Lord).
Tacitus: Germania and Agricola (Hopkins or Gudeman).
Latin Composition: Four hours weekly throughout the year.

Sophomore Year

2. **Horace:** Selected Odes, Satires and Epistles (Odes by Clement Lawrence Smith; Satires and Epistles by Kirkland; or Horace entire by Page, Palmer and Wilkins).
Terence: Adelphoe (Ashmore). **Plautus:** Captivi (Elmer or Morris or Hallidie). Three hours weekly throughout the year.

Junior Year

3. **Juvenal:** Principal Satires (Gow). Two hours weekly. First Term.
4. **Lectures on the private life of the ancients,** with collateral reading. Two hours weekly. Open to Seniors also. Second term.
5. **Cicero's Letters, or Letters of Pliny the Younger.** Two hours weekly. Third term.

Senior Year

6. **Rapid reading of Terence's plays.** Two hours weekly. First term.
7. **Lectures on the monuments and topography of Greece and Rome.** Two hours weekly. Open to Juniors also. Second term.
8. **Lucretius** (Kelsey or Lee); or Lectures etc. continued. Two hours weekly. Third term.

Special Honors in Latin

Candidates for special honors will undertake additional reading, to be assigned not later than the opening of the Spring Term of the Junior year, and will be examined therein at the close of their undergraduate course.

Modern Languages

PROFESSOR WELLS, ASSISTANT PROFESSOR PEPPER AND MR. MARCH

The study of modern languages is required of all students.

The primary object is to give students in every course a thorough literary training by means of the study of some of the great masterpieces of French and German literature, and to broaden their mental horizon by acquainting them, through reading and lectures, with the life and thought of the greatest nations of continental Europe.

In the classical course a knowledge of modern languages supplements and completes the linguistic and literary training obtained through the study of languages of the ancient world, and in the scientific and engineering courses the department purposes to give, through a longer and more careful study of the thought and speech of the modern world, a culture as nearly as possible equivalent to that obtained through classical study.

Another purpose is to prepare the student for special work in his chosen department. The instruction given to the classical student is immediately useful in his philological studies, and is also a preparation for more advanced work, both before and after graduation. In the scientific and engineering courses the student gains, early in the course, a knowledge of French and German that enables him to read scientific works in those languages during the later years of his course.

During the Junior and Senior years, electives are offered in Spanish and in the advanced study of French and German, both in reading and conversation.

More advanced courses, leading to special honors in French and German, are also offered to those students who are found qualified to pursue them, by the superior excellence of their work in the required and elective courses.

The English Language and Literature

PROFESSOR TRUAX

I. English Language

1. **Anglo-Saxon Prose.**—Elements of grammar, and readings in the *Gospels*, *Aelfric*, *Aelfred*, the *Chronicles*, and *Wulfstan*. First term Junior. Three hours weekly.

2. **Anglo-Saxon Poetry.**—Reading of *Battle of Maldon*, or *Brunanburh*, *Judith*, the *Wanderer*, and portions of *Caedmon* and *Béowulf*, with attention to language, verse, and Anglo-Saxon life and character. Second term Junior. Three hours weekly.

3. **Early Middle English** —The chief linguistic features of the Southern dialect are studied in the *Ancren Riwele*, and of the East Midland dialect in the *Ormulum*. Second term Junior (in part). Three hours weekly.

4. **English Philology.**—A systematic study of the development of the English tongue, based on the linguistic work of Courses I, 2 and 3. Third term Junior. Three hours weekly.

II. English Literature

5. **Chaucer and the Early Poets.**—Lectures giving a brief summary of the origin of English literature and its development prior to the 14th century; study of a manual giving the characteristics of Chaucer and the chief poets of the 14th and 15th centuries, and illustrative readings. The *Prologue*, the *Knights Tale*, and the *Nonne Preestes Tale* of the *Canterbury Tales* are read in full, and attention is directed to language, verse, literary art, ethical quality, and social life portrayed. Required in A. B., Ph. B. and B. S. courses. Second term Sophomore. Three hours weekly.

6. **Shakespeare and the Dramatists** —Lectures and text-book study of the origin and characteristic features of the English drama, and its history to the Restoration, with critical study, literary rather than linguistic, of several of the plays of Shakespeare, selected to represent the growth of his genius, together with interpretative and assigned readings in Marlowe and other

leading dramatists. Required in the second term Sophomore of the Engineering, and in the third term Sophomore of the other courses. Two hours weekly.

7. The English Essayists.—A brief survey of the development of English prose, and a series of critical studies of typical essays of *Bacon*, *Addison*, *Macaulay*, *DeQuincey* and *Carlyle*. Required in all courses. First term Sophomore in B. E. course. First term Junior in other courses. Three hours weekly.

8. Prose Fiction and Modern Poetry.—A study of the origin and development of the novel on the basis of *Raleigh*, illustrative readings, lectures on the genius of leading representatives of the various types of fiction, and assigned studies in particular authors, resulting in reports and discussions.

Lectures on the nature and elements of poetry, and critical studies of selected short poems from *Milton* to *Tennyson*. Second term Junior. Required in A. B., Ph. B. and B. S. courses. Two hours weekly.

9. The Great Orators.—Lectures on the art of the orator, and critical study of great political and forensic speeches from *Lord Chatham* to *Gladstone*, with practice in drawing briefs, and reports on assigned reading. Required in B. S. course and elective in A. B. and Ph. B. courses. Third term Junior. Two hours weekly.

10. Anglo-Saxon and Middle English Literature.—In connection with the linguistic study in 1, 2 and 3; the life and literary art of the period are exhibited, by illustrative readings; references and lectures. Elective in A. B., Ph. B. and B. S. courses. Junior year. Three hours weekly.

11 American Literature—A series of lectures on *Colonial Literature*, *Franklin*, *Irving*, *Emerson*, *Lowell*, *Holmes*, *Bancroft*, *Parkman*, *Prescott*, *Motley*, *Bryant*, *Longfellow*, *Poe*, *Whittier*, *Whitman*, *Brown*, *Cooper* and *Hawthorne*, together with a study of the times and leading species in a manual, and the discussion of summaries and criticisms upon assigned readings. Elective in all courses. First term Senior. Three hours weekly.

12. English Literature in the Nineteenth Century.—An attempt to estimate the spirit of the literary product of the age as a whole. Special attention is given to *Wordsworth*, *Tennyson* and *Browning* as representatives. Elective in all courses. Second term Senior. Three hours weekly.

13. The Philosophy of English Literature.—A review of the entire history of English literature with the purpose of showing the collective mind which underlies all its phases and gives it unity; the logic and the ethics of its development, the formative influences that generate changes and determine periods, and the relation that literature holds to life. Elective in all courses. Third term Senior. Three hours weekly.

14. Studies in Literary Criticism. from *Sidney* to *Pater*. Offered in substitution for course 13 in certain years.

Rhetoric

PROFESSOR HALE AND ASSISTANT PROFESSOR BENNETT

The work of the Department is based upon the following principles:

1. Criticism of the student's work in composition should be explained in personal conference.
2. Rhetoric, where presented systematically, should be taught as far as may be in constructive fashion.
3. More stress should at first be laid upon Rhetoric as an art.
4. In later years there should be ample opportunity for acquaintance with the real problems of Rhetoric, descriptive, critical and historical.

Prescribed Work

Freshman Year

Narrative Essays read and corrected with the writer. Professor Bennett. First term, all courses.

Descriptive Essays. Professor Bennett. Second term, all courses.

Constructive Rhetoric. Professor Hale and Professor Bennett. Three hours, third term, all courses.

Sophomore Year

Constructive Rhetoric. Professor Hale. Three hours, first term, A. B., Ph. B. and B. S. courses.

Essays and Orations. Second and third terms, all courses. Professor Hale.

Junior and Senior Years

The prescribed work for Junior and Senior years consists of two rhetorical exercises a term for all courses. These exercises will usually be one essay and one oration, although this arrangement may not be strictly held to. One exercise only is prescribed for the third term Senior.

Elective Courses

Argumentation. Professor Hale. Three hours. For Juniors.

History of Thought on Rhetoric and Style. Professor Hale. Three hours. For Seniors.

History and Sociology

PROFESSOR RIPTON AND ASSISTANT PROFESSOR JONES

The work of the department covers three years, beginning with the first term of the Sophomore year. It is designed to give such a general knowledge of History, Economics and Sociology as belongs to a liberal education. At the same time sufficient work is offered in the electives to prepare those students who desire to take up graduate work in these subjects. The instruction is given by text-book, by lectures, and by library references, the students reporting the results of their reading partly during the regular work of the class, and partly in the form of essays. The subjects covered by the courses are in detail as follows:

1. English History. The narrative history of England is taught chiefly, but considerable time is devoted to the industrial, commercial and social history of the country and to the development of the English Constitution. The importance of collateral readings from the English authorities is emphasized. First and second terms Sophomore. Two hours a week. *Required.*

2. French History. A preliminary study is made of the different racial elements that entered into the population of the country. The historical period treated of begins with the foundation of the French monarchy. The design in particular is to show the growth of the French nation and the working of the different forces which promoted or retarded French unity. The period studied concludes with the year 1789. The history of France from that date to the present is taken up in greater detail in Course 7. Third term Sophomore. Two hours a week. *Required.*

3. Middle Ages, Renaissance and Reformation. The broad outlines of the history of Europe from the beginning of the Christian Era to the Peace of Westphalia, 1648, are considered. Particular attention is given to the great historical events and institutions that mark this period in their relation to cause and result. First, second, and third terms Junior. Two hours a week. *Elective.*

4. American History. A study is made of the period of American discovery and exploration and of the colonial period. The main part of the work, however, begins with an examination of the causes of the American Revolution. The course is guided by lectures and the work is done in the library among the authorities. First, second and third terms Junior and Senior. Three hours a week. *Elective.*

5. New York State History. This course covers the colonial period under the Dutch and the English and the history of the State to the close of the Civil War. It is based upon lectures and research work in the library among the sources and authorities. A volunteer seminar is held fortnightly for the purpose of giving instruction in the elementary principles of historical research. First, second, and third terms Junior and Senior. One hour a week. *Elective.*

6. French Revolution and Nineteenth Century. This course considers the political, social and economic causes and reactionary results of the French Revolution. It then takes up an examination of the events and forces which contributed to the unification of Italy and Germany and concludes with a brief study of the Eastern Question. The course is designed to give a clear understanding of political affairs as they exist in Europe to-day and the historical processes by which they were brought about. First, second and third terms Senior. Three hours a week. *Elective.*

7. Comparative Politics. A study is made of the state and national systems of the American Government, together with the general duties and powers of the legislative, executive and judicial branches of the same. A comparative study is then made of the principal governments of Europe, with reference especially to the provisions of their present constitutions and the way in which those constitutions have been developed and may be amended. The course is completed by a study of International Law with reference especially to origin and development. First, second and third terms Senior. Three hours a week. *Elective.*

8. Economics. It is the design of this course to give instruction in the leading principles of Economics. While a text-book is used in order to secure more rapid progress, still the views of no school are taught exclusively. By lectures and required collateral reading an attempt is made to present the results of the latest and most approved investigations in the science. The course closes with a series of lectures upon the history of Political Economy. First term Senior. Three hours a week. *Required in all courses.*

9. Sociology. In this course the mutual relations of men in society are examined historically, that the student may learn how present conditions have resulted from past experience. Present social forces and needs are considered with the purpose of training the students to fulfill the demands of good citizenship. The collateral reading and practical sociological investigation is guided throughout the course by lectures. Second and third terms Senior. Three hours a week. *Required in all except Engineering courses.*

Mental and Moral Philosophy

PROFESSOR HOFFMAN

The course in Philosophy begins with the second term Junior and extends through the entire Senior year. Experimental Psychology and elementary Ethics, the former coming the second and the latter the third term of the Junior year, are required. All the other courses are elective. Instruction in the various studies of the department is usually given by means of lectures, discussions and the use of a text-book.

The course in Experimental Psychology is designed to acquaint the student with the most obvious facts of his mental experience. The chief problems discussed are sensation, localization of functions, memory, conception, the emotions and the will; as far as possible the positions taken up are illustrated and confirmed by actual experiments. The facts of Pathological Psychology are also here briefly considered, especially such abnormal forms of consciousness as aphasia, hypnotism, double personality and insanity.

As Elementary Ethics is a required study, only the outlines of the subject are presented in this course. The history of ethical theories is first briefly reviewed and then the present aspects of the subject are discussed. The relation of Ethics to other sciences is pointed out and much attention is given to the ethical problems involved in such questions as taxation, transportation, corporations, the treatment of criminals, the care of the poor, and the formation and dissolution of the family.

The study of the History of Philosophy begins with the first term Senior year and comes three hours a week for three successive terms. The object of the course is to go over with considerable detail the general field of Philosophy from the earliest times down to our own day and to present for consideration and discussion the views of the great thinkers of the world upon the validity of knowledge, the existence of God, the nature of virtue, the foundation of the State and other problems of similar import. Much is made of the historical connection of the different systems for the purpose of impressing upon the mind of the student the successive steps that have been taken in the actual development of thought.

Courses in Advanced Psychology and Advanced Ethics are offered to the Seniors during the first and second terms respectively in which the higher problems suggested in the elementary courses receive more extended treatment. A course in the Principles of Science is also among the electives for the first term Senior and may be taken by students in any of the departments of the college.

During the third term Senior the principal studies of this department are: Political and Social Philosophy and the Evolution of Religion. Under this last head the chief ideas of the leading religions of the heathen world are critically examined, their excellencies and defects pointed out and a comparison made of them with the special doctrines of the Christian system.

Mathematics

PROFESSOR WRIGHT AND MR. DUNCAN

1. Solid and Spherical Geometry. *Wentworth's Geometry.* Required of Freshmen in the A. B. and Ph. B. courses.

2 a. Algebra. *Wells' College Algebra. Hall and Knight's Algebra.* Freshman required.

2 b. Algebra. The Theory of Equations, including the elements of Determinants. Open only to those who have taken
5 a. Junior elective.

3 a. Plane and Spherical Trigonometry. *Wentworth.* Freshman required.

3 b. Advanced Trigonometry. *Loney's Trigonometry, Part II.* Junior elective.

4 a. Analytic Geometry. *Tanner and Allen's Analytic Geometry.* Freshman and Sophomore required.

4 b. Analytic Geometry, advanced course. *C. Smith's Conic Sections.* Junior and Senior elective. Open only to those who have taken **2 b.**

4 c. Solid Analytic Geometry. *C. Smith's Solid Geometry.* Junior and Senior elective. Open only to those who have taken 4 b.

5 a. Differential and Integral Calculus. *Taylor's Calculus.* Required of Sophomores in the B. S. course. Junior and Senior elective to others.

5 b. Calculus, advanced course. *Greenhill.* Senior elective. Open only to those who have taken 4 b and 5 a.

6. Quaternions. Senior elective.

7. Differential Equations. *Murray.* Senior elective. Open only to those who have taken 5 b.

Candidates for special honors in Mathematics may take course 4 b, 4 c, 5 b, or 7.

Mechanics and Physics

ASSISTANT PROFESSOR OPDYKE

The general course in Mechanics and Physics extends through three terms. The subjects taken up are, in order, Mechanics, Sound, Heat, Light, Magnetism and Electricity. For illustration of the class-room work, an extensive collection of modern physical apparatus has been obtained. The text-books used are Wright's Mechanics, Gage's Principles of Physics and Ames' Theory of Physics.

Elective courses in Heat and Light are offered during Senior year. Also an Elective course in Mathematical Physics during Senior year.

A course in Laboratory Physics is required of students in the B. S. and B. E. courses beginning with the third term of Sophomore year, and offered to all Seniors as an elective of two hours a week throughout the year. The phenomena of Mechanics, Sound, Heat, Light and particularly those of Electricity and Magnetism are studied by means of experiments performed by

the students, and the laws which these phenomena involve are established by quantitative measurement. The course is intended as a preparation for further independent work and includes practice in the use of instruments of delicacy and precision. Sabine's Laboratory course in Physical Measurement, Glazebrook and Shaw's Practical Physics and Nichol's Laboratory Manual of Physics are used as text books.

The course for special honors in Physics extends through three terms. The subjects vary from year to year.

The laboratory fee is \$5 per term for the Elective courses.

Chemistry

PROFESSOR PERKINS

In the undergraduate department, Chemistry is taught by lectures and recitations during the Sophomore year.

The Nott Laboratory is open in all branches of Chemistry for special students; especially for students of Agriculture or Medicine, Pharmaceutics, Manufacturing Chemists, Mineralogists, Metallurgists, and students of Medical Jurisprudence.

The course includes instruction in Theoretical and Experimental Chemistry, and systematic Qualitative and Quantitative Analysis, in all their branches and in their application to the arts and manufactures.

Students taking elective courses in the Laboratory are charged a fee of \$10 per term; a deposit of \$10 to cover cost of materials, etc., is required, the amount not used being returned. The fee for the required course in Sanitary Engineering is \$5 per term, and a deposit to cover cost of materials is also required.

For fuller information, address Professor Maurice Perkins, M. D.

Biology and Geology

PROFESSOR STOLLER

1. Elementary Biology.—This course is intended to give the student a knowledge of living plants and animals and to afford mental training in the study of nature. The work begins with the study of protoplasm, cells, tissues and organs, as parts common to plants and animals; then a series of types, first of animals and afterward of plants, is carefully studied on the basis of morphology, physiology and development. Two hours of recitations and two hours of laboratory work per week throughout the year. Required of Freshmen in the B. S. course.

2. General Biology.—This course is more advanced than the preceding and while the observational study of a series of types is made the basis of the work the main purpose is to afford the student a grasp of the ideas of biological science in their general philosophical relations. Recitations and laboratory work, counting as three hours in the first term and two hours in the second term. Required of Juniors in the Ph. B. course.

3. General Principles of Zoology.—The aim of this course is to use the data of zoology for their worth as contributing to liberal culture. The more general facts and principles of animal structure, function and development are reviewed and considered in their relation to the study of man. The scientific evidences of organic evolution and the theories of evolution of various authors are considered. Recitations and lectures, three hours per week, third term. Required of Juniors in the A. B., Ph. B. and B. S. courses.

4. Animal Morphology.—This course is adapted for students who wish a somewhat advanced knowledge and training in biology, especially as a preparation for teaching or for the medical profession. The work consists of laboratory study by microscope and dissection of a progressive series of animal types, including the anatomy of a mammal in detail, accompanied with the reading of a text on general zoology. Four hours of laboratory work and one recitation per week throughout the year. Elective to Seniors.

5. Bacteriology.—Students who have elected Course 4 may be permitted to take, in the third term, elementary practical bacteriology in place of a part of the anatomical work.

6. Geology.—The instruction in this course is adapted primarily to the study of the science as a branch of liberal culture, but enough practical work is included to afford a foundation for special study or for teaching. The work begins with the examination of the more common minerals and rocks and passes to the study of structural geology, one or two field excursions being made. The principles of dynamical geology are then considered after which the time is given to systematic geology and paleontology. In the third term the work is field work, supplemented by reading. The geological formations readily accessible from Schenectady are inspected and readings from the State geological reports are made. Three hours in the first term, two in the second and three in the third. Elective to Juniors and Seniors. Until further notice this course will be given on alternate years. It will be given in the year 1901-02.

Physiology and Physical Education

DR. TOWNE

Human Anatomy, Physiology and Physical Education are required in all courses. Physiology is taken up in the Freshman year and consists of recitations illustrated by dissections from some of the lower animals. A thorough study of the human body is made, so that the student is more able to understand the benefits resulting from systematic bodily exercise.

The course in the gymnasium is so arranged as to give a practical knowledge of the different apparatus pertaining to physical training. Commencing with light work, consisting of free gymnastics, club, dumb-bell and wand exercises, the course leads through a graded series, involving heavier work as the student becomes fitted for it.

After the study of physiology, and gymnasium work of the previous year, the student is prepared for the study of Physiology of Exercise, in which course the results of exercise, as to its effects on the body, are taken up and discussed from a physiological standpoint.

It is the aim of the department to give the student such a training in the methods of Physical Education that he may have a comprehensive knowledge of the subject, and to secure health, vigor and such harmonious development of the body as will fit it to resist disease, and prepare it for efficient service, both now and later in life.

A thorough physical examination of each student is made in the fall, and the measurements are outlined on charts, so as to show the parts below the normal development, for which special exercises suited to the health and physical condition of each individual are prescribed. In the spring measurements are taken again and the improvement noted.

In connection with the college is a large gymnasium well equipped with new apparatus and thoroughly adapted to the purpose of providing excellent opportunities for physical training. It is open from 7 A. M. to 6 P. M. during the college year, to all classes for voluntary work. All kinds of athletic sports are encouraged, as much as possible, under the advice and guidance of the department.

Lectures

It is the policy of the College to provide its students with the advantages of frequent lectures by specialists in the various departments of knowledge.

In addition to these Professor William Wells, LL. D., delivers each year a course of lectures on current history. The range and importance of these lectures are indicated by the following list of subjects: "Cuba, Mexico and Central America," "German Universities and German Politics," "The Pacific Slope and its History," "Modern France," "Alaska and the Yellowstone Park," "Greece and Turkey," "Egypt and the Nile," "Northern Africa and Moorish Spain," "The Scandinavian Norseland," "All the Russias," "The Story of the Canadas," "The Schools and Scholars of the Germany of To-day," "Idiomatic Analogies of the Principal European Tongues," "Our West Indian Acquisitions," "The Isles of the Caribbean Sea."

THE LIBRARY

PETER NELSON, ACTING LIBRARIAN

The library is open every week-day from 8 A. M. to 12:30 P. M., from 2 P. M. to 6 P. M., and from 7 P. M. to 9 P. M. It occupies the building erected for it by the widow of the late F. H. Powers, of Philadelphia. Among its special attractions are the excellent engineering and scientific library of the late Professor Gillespie, the collection of mathematical works made by the late John Patterson, of Albany, and the library of the late Hon. Henry J. Cullen, of the class of 1860. The income from a bequest of five thousand dollars left by the late Lemon Thomson, Esq., of Albany, is devoted to the purchase of books on American subjects, especially history and political science. An entire alcove, known as the "Thomson Alcove," is reserved for these books.

The system of shelving is such that each student may inspect the books for himself. The librarian and his assistants are always ready to aid the student in his study and investigation, and to furnish him needed information regarding the direct personal use of indexes, catalogues and other library tools.

In the periodical reading room of the library will be found the current issues of about ninety of the most important magazines, reviews, periodicals and newspapers, both American and foreign, as well as the transactions of a number of the learned societies and organizations.

Any student is allowed to withdraw books from the library upon making a deposit of five dollars which can be taken up at any time.

THE NATURAL HISTORY MUSEUMS

PROFESSOR STOLLER, CURATOR

Biological Museum

In Zoölogy, the local fauna is represented by a considerable collection of mounted birds, by a number of skulls, skeletons and mounted specimens of mammals, and by alcoholic specimens of reptiles and fishes. In the department of invertebrates the collections of marine animals made by Dr. Harrison E. Webster are extensive, including sponges, corals, worms, crustacea and molluscs, the total number of species represented being over 5,000. The Wheatley collection of shells presented by E. C. Delavan, Esq., consists of 8,000 specimens.

The Botanical collections include a nearly complete set of local flowering plants, the work of Professor Jonathan Pearson. To this there has since been added a complete set of the ferns and fern allies of Schenectady county.

The flora of the United States is further represented by collections from Virginia, the Red River region of the southwest and those made by Dr. Nevins in Alabama. The lower cryptogams are represented by an extremely valuable collection of 2,300 specimens of fungi the gift of Mr. J. B. Ellis.

The Herbarium also includes a considerable number of foreign plants, including representative collections from Germany, Spain, Asia Minor and England, as well as some specimens from Iceland, Norway, France and Switzerland. They have been sorted and distributed in a single series following the latest accepted sequence, that of Engler and Prantl's "Naturliche Pflanzenfamilien," making the entire collection of some 8,000 or 10,000 specimens readily accessible for reference and study.

Geological Museum

In Mineralogy, the Wheatley collection of minerals donated by E. C. Delavan, Esq., which is labeled according to the system of Dana, contains 4,000 specimens many of which represent the more valuable forms.

In Geology, there is a general collection of rocks and minerals, comprising some 3,000 specimens; and a considerable collection of Paleozoic and Mesozoic fossils.

The collections may be grouped under the three following heads:

I. A collection of rocks and minerals in part donated by the U. S. National Museum.

II. A collection of rocks and fossils from the Carboniferous, Permian and Cretaceous systems of the United States, deposited by the United States and Kansas Geological Surveys, which contains the type material described in the classification of the American Permian.

III. Rocks and fossils from the New York formations, principally from the Lower and Upper Silurian and Devonian systems.

The collections made by the geological department under the direction of Professor C. S. Prosser, so increased the museum that there is plenty of material now available for the careful study of the Paleozoic and Mesozoic geology of the United States. A systematic collection of the Paleozoic rocks and fossils, principally from the New York formations, has been arranged in the north gallery of the museum.

ORDER AND PROPORTION
OF STUDIES
FOR THE YEAR 1900-1901

A. B. Course

FRESHMAN YEAR

First Term

Hours per week.

- 4 Greek.
- 4 Latin.
- 4 Solid Geometry.
- 3 French.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.
- Greek Prose Composition.
- Latin Prose Composition.

Second Term

- 4 Greek.
- 4 Latin.
- 4 Algebra.
- 3 French.
- 2 Physiology.
- 1 Gymnastics.
- Descriptive Essays.
- Greek Prose Composition.
- Latin Prose Composition.

Third Term

- 4 Greek.
- 4 Latin.
- 3 French.
- 3 Rhetoric.
- 3 Trigonometry.
- 1 Gymnastics.
- Greek Prose Composition.
- Latin Prose Composition.

A. B. Course**SOPHOMORE YEAR**

First Term

Hours per week.

- 3 Greek.
- 3 Latin.
- 3 Rhetoric.
- 3 Analytic Geometry.
- 3 German.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 Greek.
- 3 Latin.
- 3 German.
- 3 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

Third Term

- 3 Greek.
- 3 Latin.
- 3 German.
- 3 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

A. B. Course
JUNIOR YEAR

First Term

Hours per week.

- 4 Mechanics
- 3 German.
- 3 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Second Term

- 3 Psychology.
- 3 Physics.
- 2 German.
- 2 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Third Term

- 3 Biology.
- 3 Physics.
- 3 Ethics.
- 1 Rhetoric.
- 7 Elective.*

* For list of Electives, see page 77.

A. B. Course**SENIOR YEAR**

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

* For list of Electives, see page 78.

Ph. B. Course

FRESHMAN YEAR

First Term

Hours per week.

- 4 Latin.
- 4 Solid Geometry.
- 3 German.
- 3 French.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.
- Latin Prose Composition.

Second Term

- 4 Latin.
- 4 Algebra.
- 3 German.
- 3 French.
- 2 Physiology.
- 1 Gymnastics.
- Descriptive Essays.
- Latin Prose Composition.

Third Term

- 4 Latin.
- 3 Rhetoric.
- 3 Trigonometry.
- 3 German.
- 3 French.
- 1 Gymnastics.

Ph. B. Course**SOPHOMORE YEAR**

First Term

Hours per week.

- 3 Latin.
- 3 Rhetoric.
- 3 Analytic Geometry.
- 3 German or French.
- 3 Chemistry.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 Latin.
- 3 German or French.
- 3 English Literature.
- 3 Chemistry.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

Third Term

- 3 Latin.
- 4 Chemistry.
- 3 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

Ph. B. Course

JUNIOR YEAR

First Term

Hours per week.

- 3 Biology.
- 3 English Literature.
- 4 Mechanics
- 1 Rhetoric.
- 7 Elective.*

Second Term

- 2 Biology.
- 3 Physics.
- 3 Psychology.
- 2 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Third Term

- 3 Physics.
- 3 Biology.
- 4 Ethics.
- 1 Rhetoric.
- 7 Elective.*

*For list of Electives, see page 77.

Ph. B. Course**SENIOR YEAR**

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

*For list of Electives, see page 78.

B. S. Course

FRESHMAN YEAR

First Term

Hours per week.

- 3 French.
- 5 Algebra.
- 3 German.
- 3 Biology.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.

Second Term

- 3 French.
- 4 Trigonometry and Analytic Geometry.
- 3 German.
- 3 Biology.
- 2 Physiology.
- 1 Gymnastics.
- Descriptive Essays.

Third Term

- 3 French.
- 3 Rhetoric.
- 4 Analytic Geometry.
- 3 German.
- 3 Biology.
- 1 Gymnastics.

B. S. Course**SOPHOMORE YEAR**

First Term

Hours per week.

- 3 German or French.
- 3 Rhetoric.
- 5 Calculus.
- 3 Chemistry.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 English Literature.
- 5 Mechanics.
- 2 Logic.
- 3 Chemistry.
- 2 History.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

Third Term

- 2 English Literature.
- 5 Physics and Physical Laboratory.
- 3 Chemistry.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

B. S. Course

JUNIOR YEAR

First Term

Hours per week.

- 3 English Literature.
- 5 Physics and Physical Laboratory.
- 1 Rhetoric.
- 8 Elective.*

Second Term

- 3 Psychology.
- 2 English Literature.
- 3 Astronomy.
- 1 Rhetoric.
- 8 Elective.*

Third Term

- 3 Ethics.
- 3 Biology.
- 2 English Literature.
- 1 Rhetoric.
- 8 Elective.*

*For list of Electives, see page 77.

B. S. Course
SENIOR YEAR

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

*For list of Electives, see page 78.

General List of Electives

[For limiting conditions, see statements of respective departments.]

JUNIOR YEAR

First Term

Hours per week.

- 2 Greek.
- 2 Latin,—Plautus.
- 3 Anglo-Saxon.
- 3 German.
- 3 French.
- 2 Theory of Equations, or Calculus.
- 3 American History.
- 2 European History.
- 3 Advanced Rhetoric,—Argumentation.
- 3 Chemistry. (For A. B. Course.)
- 3 Chemical Laboratory.

Second Term

- 2 Greek.
- 2 Latin,—Juvenal.
- 3 Anglo-Saxon and Early Middle English.
- 3 German.
- 3 French.
- 2 Advanced Trigonometry, or Calculus.
- 3 American History.
- 2 European History.
- 3 Advanced Rhetoric,—Argumentation.
- 3 Chemistry. (For A. B. Course.)
- 3 Chemical Laboratory.

Third Term

- 2 Greek.
- 2 Latin,—Lectures, Private Life of Greeks and Romans.
- 3 English Philology.
- 3 German.
- 3 French.

- 2 Advanced Analytic Geometry, or Calculus.
 - 3 American History.
 - 2 European History.
 - 3 Advanced Rhetoric,—Argumentation.
 - 3 Chemistry. (For A. B. Course.)
 - 3 Chemical Laboratory.
-

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

First Term

Hours per week.

- 2 Greek.
- 2 Latin,—Lucretius.
- 3 Spanish.
- 3 American Literature, or Studies in English
Literary Criticism.
- 3 History of Thought on Rhetoric and Style.
- 2 Solid Analytic Geometry, or Advanced Calculus.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 3 General Geology.
- 3 Comparative Politics.
- 3 European History.
- 3 History of Philosophy.
- 3 Advanced Psychology.
- 3 Invertebrate Morphology.

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

Second Term

Hours per week.

- 2 Greek.
- 2 Latin,—Lectures, Monuments of Greece and Rome.
- 3 Spanish.
- 3 English Literature in the 19th Century, or Studies in English Literary Criticism.
- 3 History of Thought on Rhetoric and Style.
- 2 Quaternions.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 2 Scientific Evidences of Evolution.
- 3 Vertebrate Anatomy.
- 3 Comparative Politics.
- 3 European History.
- 3 History of Philosophy.
- 3 Advanced Ethics.

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

Third Term

Hours per week.

- 2 Greek.
- 2 Latin,—Teachers' Course, or Introductory Course in Epigraphy.
- 3 Spanish.
- 3 Studies in English Literary Criticism, or the Philosophy of English Literature.
- 3 History of Thought on Rhetoric and Style.
- 2 Differential Equations.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 2 Theories of Evolution.
- 3 European History.
- 3 International Law.
- 3 Evolution of Religion.
- 3 History of Philosophy.
- 3 Comparative Vertebrate Anatomy.

FOR
CURRICULUM
OF THE
B. E. COURSES

See pages 118 to 123

GENERAL REGULATIONS

Registration.—Every student must report at the Registrar's office at the beginning of each term and register college or local residence. Any change of residence during the term must be reported at once.

Residence.—Students are not allowed to change their college rooms during the term without permission of the President or Dean; for every change the sum of two dollars is added to the term-bill. Students must conform to college rules regarding keys.

Reports.—A daily record of attendance at class and chapel and of scholarship is kept and is transmitted at the close of each term, or more frequently, to the student's parent or guardian.

Standing.—There are four grades of scholarship:—from 9 to 10 inclusive, first grade; from 8 to 8.9, second grade; from 7 to 7.9, third grade; from 6 to 6.9, fourth grade. Any mark below six indicates failure, or, in the mathematical studies of the Engineering courses, any mark below seven.

Those receiving the three highest marks for the whole course in the Engineering Department and the seven highest marks in the other departments are entitled to appointment as Commencement Orators.

Absences in General.—Absences are recorded as of three kinds; permitted, excused and unexcused. No one but the President or the Dean can authorize the record of an absence as permitted.

Absences are entered (in every course) against a student from the beginning of a term until he reports his return to the Registrar. A like report is required after absence because of sickness or permission.

Class-room Absences.—Students will be allowed, each term, as many absences without excuse, in any subject, as there are recitations per week in that subject.

After this limit has been reached, each additional unexcused absence will be marked as a failure in recitation, and one or more excused absences will subject the student to a special preliminary examination before he can proceed to his regular examination.

After a number of unexcused absences equal to three weeks of recitations in any subject, the student will not be allowed to continue his work in that subject, but must take it with the succeeding class.

No excuse will be granted except for protracted illness, or for reasons in every way exceptional.

This rule does not apply to examinations, or to recitations just before or after any vacation or recess, or to any class as a whole at any time, and is not to be interpreted as remitting any part of the total work of the term.

Chapel Absences.—Ten absences without excuse will be allowed each term. All absences after the first ten lower the standing at the rate of one unit for every two absences.

No absences will be excused except for protracted illness or for reasons in every way exceptional.

In the determination of a student's general standing, marks for chapel attendance are counted as the equivalent of a one hour per week recitation. They affect the granting of scholarships and the selection of honor men.

Conditions.—No student who has any conditions unsatisfied at the close of the first condition examination of the college year will be permitted to continue with his class without the express authorization of the Faculty. Conditions not removed by the end of the second examination held after their imposition, must be made up in class at the first opportunity, and this work shall take precedence of the regular work in case of conflict in the schedule. No Senior who has failed to make up all his back work by the end of the second term of Senior year can be recommended for a degree, except by special vote of the Faculty.

Examinations for the removal of conditions occur on the first Saturday of the Fall term, and on the first Saturday in December, March and May, as indicated in the College calendar.

Students who have been excused from any term examination may be examined later at the option of the instructor, but such examination cannot be postponed beyond the first condition examination. A failure to pass will be regarded as a failure at the original term examination.

A failure to report at any appointed examination will be regarded as a trial unless previously excused.

Irregular Students.—Irregular students have no class relation, or class privilege; they are debarred from competition for prizes and from the attainment of special honors.

Changes of Course.—Students are not permitted to pass from one course to another, or to take any studies out of their regular order, without the specific authorization of the Faculty.

The evidence that a student's continuance in college is resulting in no advantage to himself, or in harm to others, will occasion his separation from the institution.

EXPENSES

Matriculation fee	\$ 5 00
Tuition, per term.....	25 00
Room rent, per term	6 00
For room occupied by one student.....	12 00
Chemical laboratory fees:	
Elective courses, per term.....	10 00
Required course in Sanitary Engineering, per term..	5 00
Electrical engineering laboratory fee, per term	5 00
Biological laboratory fees:	
Elective courses, per term.....	5 00
Required courses, per term	2 00
Geological laboratory fee, per term.....	2 00
Physical laboratory fees:	
Elective courses, per term.....	5 00
Required courses, per term	2 00
Deposits to secure cost of material, etc:	
Chemical laboratory	10 00
Biological laboratory, elective course.....	5 00
Graduation fee	8 00
Diploma fee	4 50

Students who take part of their Senior year's work at the Albany Medical College, as provided on page 34, are charged \$125 for the year's tuition, \$50 to be paid to the Treasurer of Union College, and \$75 to the Treasurer of the Albany Medical College.

All bills are to be paid within two weeks from the beginning of the term. No deduction is made from the usual charges on account of absence from college.

The Faculty are not allowed to sign any degree, certificate or dismissal for any student until his bills are paid or secured.

Board can be procured for \$3 to \$4 a week. The total expense of tuition, room, text-books, board, lights, washing, etc., during the three terms, is about \$280.

SCHOLARSHIPS

Funds given especially for this purpose enable the College to offer aid to a number of students each year as follows:

Tuition Scholarships

These cover charges for tuition (seventy-five dollars per year, room-rent not included) available for students in all courses, two-thirds of the whole number being open to applicants in the Classical and Latin-Scientific courses, and one-third to applicants in the Scientific and Engineering courses. These scholarships are awarded in the order of application.

Conditions

An applicant for a Tuition Scholarship must declare his purpose to remain in Union College until he has taken his degree and must furnish at least two certificates from reputable citizens not members of his own family stating their knowledge of his financial need as well as of his good character and studious habits. The scholarship will be forfeited upon the failure of the student to maintain an average grade of 80 per cent. in his studies or upon sufficient evidence of moral delinquency.

Application blanks will be provided by the President or Dean upon request.

John David Wolfe Memorial Scholarships

The income of a Fund of Fifty Thousand Dollars established by the generosity of Miss Catharine Lorillard Wolfe, is designed to aid students from the Southern States.

Levi Parsons Scholarships

A generous benefaction by the late Hon. Levi Parsons, of Gloversville, N. Y., maintains several scholarships in each class, yielding about one hundred and fifty dollars a year, each; this provides for tuition, room-rent and a money payment of \$20 per term.

Among applicants, preference is given

1st, to blood relatives of the Founder, bearing his name and living in the county of Fulton, Montgomery or Hamilton, in the State of New York, and especially to those bearing his name and living in Gloversville or Johnstown, Fulton county.

2d, to applicants living in the following places according to the following order:

1. The city of Gloversville, Fulton Co.
2. The city of Johnstown.
3. The township of Johnstown.
4. The county of Fulton.
5. The adjoining counties of Montgomery and Hamilton.
6. To blood relatives living in any other part of the United States.

Nomination to scholarships is made by the Board of Directors of the Gloversville Free Library; and the nominees must pass satisfactory examinations at the College. Applications are received by the Directors of the Gloversville Free Library, Gloversville, N. Y. Students must maintain a grade of 80 as above.

Union School Scholarships

These scholarships are limited to pupils of the Union School in Schenectady, who are sons or wards of residents. They must bring from the Principal a certificate of preparation for college and also one of abstinence, during the course, from tobacco and spirituous liquors, and they must sign a like pledge for their college course. They receive a remission of \$15 on the term-bill, on condition of maintaining a grade of 80 and observing their pledge.

PRIZES

Blatchford Oratorical Medals

The Hon. Richard M. Blatchford, LL. D., of New York city, founded oratorical prizes, consisting of two gold medals of the value of the interest on \$1,000, which are given to the two members of the graduating class who deliver at Commencement the best orations; "regard being had alike to their elevated and classical character and to their graceful and effective delivery." These medals are awarded by a committee appointed by the Trustees and are presented at the close of the exercises.

Warner Prize

The Hon. Horatio G. Warner, LL. D., of Rochester, N. Y., founded an annual prize consisting of silver plate of the value of \$45 to be presented at Commencement to the "graduate of Union College, Classical course, who shall reach the highest standing in the performance of collegiate duties, and also sustain the best character for moral rectitude and deportment, without regard to religious practice or profession." The prize is awarded by the Faculty.

Ingham Prize

The Hon. Albert C. Ingham, LL. D., of Meridian, N. Y., founded an annual prize of the interest on \$1,000 (in the form of plate or medal or money, or both medal and money, as preferred), to be awarded at Commencement to that Senior connected with the College for not less than two years who shall offer the best essay on one of two assigned subjects in English Literature or History.

The essay must be type-written and must contain not less than 4,000 nor more than 4,500 words. Its signature (fictitious) and the writer's real name must be enclosed in a sealed envelope; the signature and the name of the prize being given on the outside. The essay with the note must be presented by noon on the fifteenth day of May.

Allen Essay Prizes

The Hon. William F. Allen, LL. D., of Oswego, N. Y., established prizes for the best three essays on any subject, submitted by members of the Senior class. They are respectively, \$20, \$15 and \$10, and are presented at Commencement.

The essay must be type-written and must contain not less than 2,500 nor more than 3,000 words, and must be signed and presented (with note as in the case of the Ingham Essay) by noon on May 15th.

Prize for Extemporaneous Speaking

A prize of \$50 in money is awarded to that member of the College who shall deliver the best extemporaneous speech at a public competition to be held in Commencement week in each year. The award is made by a committee appointed by the donor, and is based on the following considerations: (1) The appropriateness and correctness of the subject matter; (2) the logical force of the argument; (3) the excellence of the style; (4) the grace and effectiveness of the delivery. All students in regular standing are eligible. The number of competitors is, however, limited to ten.

Clark Prizes

Prizes consisting of books are awarded at Commencement to the two members of the Junior class who offer the best essays on assigned subjects in English Literature.

The essay must be type-written and must contain not less than 2,500 nor more than 3,000 words, and must be signed and presented (with note, as in the case of the Ingham and the Allen Essays) by noon on May 15th.

Oratorical Prizes

Prizes are presented at Commencement to the two Juniors and the two Sophomores who deliver the orations best in composition and delivery, on the occasion of Prize Speaking in Commencement week. Four Juniors and four Sophomores are selected for this competition by a Committee of the Faculty, on the fifteenth of April. Candidates must be in full standing on appearance before the Committee.

Allison-Foote Prize

Founded by George F. Allison, of New York city, and Wallace T. Foote, of Port Henry, N. Y., for the encouragement of debate in the Literary Societies. The prize consists of \$100 in cash, and is to be awarded as the result of a public competition between representatives of the Adelpic and Philomathean Literary Societies. \$50 will be awarded to the society presenting the strongest argument. The remaining \$50 will be awarded to the debater who makes the best single speech, regardless of his society relations. Contestants must have engaged in at least ten debates in their respective societies during the college year immediately preceding. All further details are to be left to the determination of a committee consisting of the President and the Dean of the College, and the Professor of Rhetoric.

John K. Porter Memorial Scholarships

A fund given by Mrs. John K. Porter, in memory of her husband, is designed to assist students who, after graduating from college, pursue the study of law. The fund provides, at present, for three Scholarships of ninety dollars each. The awards will be made at Commencement to Seniors chosen by the Faculty.

Gilbert M. Spier Memorial Scholarship

A fund given by Mrs. Glover C. Arnold, in memory of her father, the late Judge Gilbert M. Spier, provides another Scholarship for students of law who go from Union College to the Albany Law School, another department of Union University.

The sum of ninety dollars will be awarded at Commencement to the Senior chosen by the Faculty, the choice being made on the basis of excellence in historical studies.

Applicants for Law School scholarships must register at the College office by May 1st of Senior year.

DEGREES AND HONORS

Degrees

The degrees of the college are conferred in harmony with a resolution of the Board of Trustees, which says: "The successful completion of the Classical course [Course 1, page 33] shall entitle the student to the degree of Bachelor of Arts; of the Latin-Scientific course [Course 2, page 33] to the degree of Bachelor of Philosophy; of the Scientific course [Course 3, page 33] to the degree of Bachelor of Science; of one of the Engineering courses [Courses 4, 5, 6, pages 33 and 34] to the degree of Bachelor of Engineering." The candidate for a degree must have entered college before the close of the first Senior term, must have paid all dues to the College Treasurer, and returned all books borrowed from the Library. He must also attend the conferring of Degrees, or be expressly excused therefrom.

Honors

All Commencement prizes are limited to A. B., B. S., or Ph. B. students who have entered at or before the beginning of the Senior year, and who are in full standing at the close of the second term; and to Engineering students entered likewise and in full standing at the close of the second term, in both the Engineering course and the English department of the B. S. or Ph. B. course.

Commencement Appointments

These honors are assigned to ten Seniors on the basis of scholarship, as stated under Standing, page 83. Provisional appointments are made at the close of the second term Senior, and become final if those who receive them retain the same relative rank to the end of their course. Under present regulations, no other persons can become competitors for the Blatchford Oratorical Medals.

Seniors not in full standing at the close of the second term, shall be considered ineligible to a Commencement appointment.

Places gained as the result of the third term's work, shall be on the excused list, unless ordered otherwise by special vote of the Faculty.

The Valedictory

This honor is awarded to the Senior of highest standing among the ten receiving Commencement appointments.

Special Honors

Special Honors are also given at graduation in each of the following departments: Greek, Latin, English, French, German, Mathematics, Physics, Chemistry, Biology, Economics, History, Sociology and Philosophy. The work required in each case will be the equivalent of three terms of class-room work of two hours per week each, and will be outside of the prescribed or elective courses. The candidate for Special Honors must apply to the head of the department in which he proposes to take Honors, not later than the first Monday of the Spring term of the Junior year. He must attain in all the studies of the department in which he tries for Honors, a rank of not less than ninety per cent. of the maximum. The evidence that he has successfully completed the extra course prescribed for him must be submitted, not later than June first of the Senior year, to the Faculty, who shall decide in each case whether the work done is worthy of an Honor. The Honors attained are stated in the diploma, and the names of the students who take Honors are printed on the Commencement programme.

DEGREES CONFERRED

AT THE

ONE HUNDRED AND THIRD ANNUAL COMMENCEMENT

June 27, 1900

HONORARY

LL. D.

WHITELAW REID	New York city
WILLIAM H. H. MOORE.....	New York city

D. D.

SHELDON M. GRISWOLD.....	Hudson, N. Y.
A. RUSSELL STEVENSON.....	Schenectady, N. Y.

IN COURSE

A. M.

HOWARD CONANT	Class of '92
ALBERT SEWALL COX	" of '95
IRA ROZEL CURTISS	" of '60
IRA HOTALING	" of '97
HARLOW McMILLEN	" of '87

M. S.

BRYAN O. BURGIN	Class of '95
GEORGE S. PIERSON	" of '75
GEORGE EDWARD POLLOCK	" of '96

CLASS OF 1900

A. B.

LESLIE NATHAN BROUGHTON	Delhi.
WILLARD DAYTON BROWN	Lawyersville.
EVERETT GARNSEY BROWNELL.....	Ballston Spa.
EVAN R. CULLINGS	Gifford.

HOWARD POTTER DUNHAM.....	Schenectady.
JOHN DANIEL EDWARDS.....	Corinth.
JOHN JACKSON ELLIOTT.....	Andes.
GEORGE WILLIAM FEATHERSTONHAUGH, JR.....	Schenectady.
ANDREW CLARENCE FENTON	Andes.
LESTER THOMAS HUBBARD.....	Cohoes.
HERMAN BULLOCK JONES.....	Himrod.
WILLIAM DEWEY LOUCKS.....	Albany.
DOUGLAS WARNER PAIGE	Schenectady.
CHARLES EDGAR PALMER, JR.....	Schenectady.
CLAYTON JOHNSON POTTER.....	Glenville.
GEORGE ERNEST RAITT.....	Newburgh.
EUGENE MARTIN SANDERS.....	St. Johnsville.
PHILIP LIVINGSTON THOMSON.....	Schenectady.
JOHN MITCHELL TUGGEY.....	Trout River.

Ph. B.

ARCHIBALD LAMON ANDERSON.....	Ballston Spa.
MELVIN THOMAS BENDER	Albany.
LELAND LOWELL BOORN.....	Schenevus.
WILL CLYDE CAMPBELL	Chicago, Ill.
CARL PORTER DALTON	Salamanca.
GEORGE ELWOOD PIKE	Sanborn.
STEPHEN SMITH READ	Bath.
ERSKINE CLARK ROGERS.....	Sandy Hill.
CLARENCE DONALD STEWART.....	Amsterdam.
WAGNER VAN VLACK	Palatine Bridge.

B. S.

CLINTON JONES	Schenectady.
---------------------	--------------

B. E.

ARTHUR HAMILTON LAWTON	Nyack.
CHARLES HARVEY MACCULLOCH	Albany.
LEROY ORMAN RIPLEY	Cooperstown.
LAFORST GEORGE ROBINSON.....	Plattsburgh.
WALTER LYNES SMITH.....	Chicopee Falls Mass.

AWARDS

Valedictory

WILLARD DAYTON BROWN Lawyersville.

Commencement Orations

LESLIE NATHAN BROUGHTON Delhi.
JOHN DANIEL EDWARDS..... Corinth.
HERMAN BULLOCK JONES Himrod.
CLAYTON JOHNSON POTTER..... Glenville.
PHILIP LIVINGSTON THOMSON..... Schenectady.
JOHN MITCHELL TUGGEY..... Trout River.

Engineering Theses

ARTHUR HAMILTON LAWTON Nyack.
CHARLES HARVEY MACCULLOCH Albany.
LEROY ORMAN RIPLEY Cooperstown.

Special Honors

In Biology..... CARL P. DALTON.
In English LESLIE NATHAN BROUGHTON.
..... WILLARD DAYTON BROWN.
In Greek..... JOHN DANIEL EDWARDS
In History WILLIAM DEWEY LOUCKS.
In Latin EVERETT GARNSEY BROWNELL.
..... JOHN DANIEL EDWARDS.
In Mathematics WILL CLYDE CAMPBELL.

Warner Prize

For Seniors

WILLARD DAYTON BROWN

Blatchford Oratorical Medals

For Seniors

1st. CLAYTON JOHNSON POTTER
2nd. PHILIP LIVINGSTON THOMSON

Honorable Mention

WILLARD DAYTON BROWN

*Union College***Ingham Prize**

For Seniors

LESTER THOMAS HUBBARD

Allen Essay Prizes

For Seniors

1st. EMIL LEWIS WINTERBERG

2d. MELVIN THOMAS BENDER

3d. LESLIE NATHAN BROUGHTON

Junior Oratorical Prizes

1st. LEOPOLD MINKIN

2d. ARTHUR SPENCER GOLDEN

Sophomore Oratorical Prizes

1st. ADDISON HOTALING HINMAN

2d. RAYMOND R. CRIM

Allison-Foote PrizesWon by the Philomathean Society
and

STEPHEN SMITH READ

Class of 1900

John K. Porter Memorial Scholarships

LELAND LOWELL BOORN

ANDREW CLARENCE FENTON

LESTER THOMAS HUBBARD

Gilbert M. Spier Memorial Scholarship

WILLIAM DEWEY LOUCKS

Phi Beta Kappa

from the Senior Class

LESLIE NATHAN BROUGHTON

WILLARD DAYTON BROWN

JOHN DANIEL EDWARDS

HERMAN BULLOCK JONES

CLAYTON JOHNSON POTTER

PHILIP LIVINGSTON THOMSON

Sigma Xi

from the Senior Class

ARTHUR HAMILTON LAWTON

SCHOOL OF CIVIL ENGINEERING

UNION COLLEGE

SCHENECTADY, N. Y.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature.

MAURICE PERKINS, A. M., M. D.,
Professor of Chemistry.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

JAMES REAGLES TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS WALLACE WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK SARGENT HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

BENJAMIN H. RIPTON, PH. D., LL. D., DEAN,
Professor of History and Sociology.

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

ALBERT H. PEPPER, A. M.,
Assistant Professor of Modern Languages.

Union College

HOWARD OPDYKE, A. B.,
Assistant Professor of Physics.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

HORACE T. EDDY, B. E. E., E. E.,
Instructor in Electrical Engineering.

JOHN L. MARCH, A. M.,
Instructor in Modern Languages.

LINDSAY DUNCAN, B. S.,
Instructor in Mathematics, Drafting and Surveying.

FRANK BLAIR WILLIAMS, C. E., M. S., PH. D.,
Instructor in Engineering.

HERBERT L. TOWNE, M. D.,
Instructor in Physical Culture.

SCHOOL OF CIVIL ENGINEERING

This school was founded in 1845. Its object is to give its students such instruction in the theory and practice of Civil Engineering as will qualify them for immediate usefulness in the field and office in a subordinate capacity, and at the same time fit them to fill satisfactorily the higher positions in the profession, after a moderate amount of experience in the routine of practice. The course of instruction aims to effect this by constant exercise in mechanical drafting, instrumental field-work and numerical calculations, combined with lectures and the study of text-books.

The connection of the Engineering School with the College affords its students peculiar advantages for study in the various departments of the latter, to all of which they are admitted without extra charge.

The location of Schenectady is most favorable for an Engineering School. The city is on the Mohawk river and is intersected by several railroads and the Erie Canal. These present many bridges and other works interesting to the Engineering student. There are also extensive Locomotive Works, Electrical Works, Machine Shops and Foundries, all of which afford special advantages for examination and study.

For information regarding requirements for admission, expenses, and terms and vacations, see pages 34-42, 86 and 5, 6.

Degrees.—Three courses in Engineering are offered, viz: A general Civil Engineering course which is intended to give the basis of an Engineering education, including the fundamental principles of all special branches of the profession, a knowledge of both French and German, and a course in English; a special course in Sanitary Engineering which differs from the general course in substituting special work in Sanitary Engineering for some of the general Engineering studies; and a course in Electri-

cal Engineering. The Degree of Bachelor of Engineering is given for the successful completion of any one of these courses. These three courses are alike during the first three years but widely different during the Senior year.

This permits a student to defer the selection of his particular course until a year or two of study has made him somewhat familiar with the characteristics of the several courses and with his own preference and capacity. It is intended that the Diplomas conferring the degree shall be a guaranty of more than average ability and industry. Students not graduating receive certificates stating what they have done, both as to quantity and quality. Candidates must have presented a thesis completed according to the regulations of the School, must also have paid all dues at the College Treasury, must have returned all books taken from the College Library, and must be present at the conferring of degrees, unless expressly excused.

Architectural Students will find a large part of the general course adapted to their requirements; particularly the Drafting, Mensuration, Stereotomy, Strength of Materials and the study of Difficult Foundations, Building Construction, Heating and Ventilation, etc.

ADMISSION

General Conditions for Admission

[See page 35.]

Requirements for Admission

Candidates for admission to the Freshman class in any of the Engineering courses, are required to pass satisfactory examinations in the following subjects:

English Literature, Arithmetic, Algebra, Plane and Solid Geometry, Plane Trigonometry, Modern Geography, History of the United States, Physiology, and an amount of French or German equivalent to one year's study, as given in detail on pages 36-40.

COURSES OF STUDY

Mathematics

The studies of this department include the following: Algebra (completed), Spherical Trigonometry, Analytic Geometry, Descriptive Geometry, Differential and Integral Calculus. Optional courses in Higher Mathematics are also offered. See also pages 53, 54.

Mechanics and Physics

The following are the subjects included in the course:

In Analytical Mechanics.—Statics, Dynamics, Hydrostatics, Hydrodynamics, Pneumatics.

In Physics—Optics, Acoustics, Heat, Electricity, Magnetism and Galvanism. Physical Laboratory practice is required of all engineering students. See also pages 54, 55.

Astronomy

The instruction in Astronomy includes Spherical Astronomy, Theory of Astronomical Instruments, and Physical Astronomy. The students are also given a practical course in Astronomical Surveying and Location.

Biology

The required studies in the General and Sanitary Engineering courses are: Structural Botany, Physiology, and in the Sanitary course, Bacteriology. Physiology is required also in the Electrical course. Structural Botany includes the microscopical study of the vegetable cell, the tissues and the tissue-systems of the higher plants, with special reference to the uses of woods in the constructive arts. In Bacteriology some of the common bacteria of water, air and soil are studied according to the methods of modern bacteriological research. The accompanying lectures treat of bacteria in regard to their place and role in nature, their relations to sanitary science, etc. In this work the student uses the microscope, prepares sections, etc. See also pages 56, 57.

Geology

The required work of the first term of the Junior year is a course in Economic Geology, which includes the explanation of the general principles of geology, and a description of the occurrence and distribution of the mineral deposits and materials for construction in the United States. This is supplemented in the Senior year by the course in Mineralogy and Lithology which consists of laboratory study of minerals and building stones. In addition, all the other courses offered by the Geological Department are open as electives to Engineering students who have had the necessary preparation. The course in Field Geology would be found especially helpful to Civil Engineers. See page 57.

Chemistry, Mineralogy and Metallurgy

The recitations in chemistry extend through three terms. In addition to this, the students receive Laboratory instruction. They are taught the means of qualitative analysis and exercise in the use of the blow-pipe to determine the constitution of the useful minerals. Their knowledge of these materials is increased by a course in determinative mineralogy, in which use is made of the celebrated Wheatley Collection, and a complete set of crystal models. As far as practicable, the operations of industrial chemistry are carried out. Students are taught to tin zinc, and to gild iron; to electroplate with gold, silver, copper and nickel; to form the various sulpho compounds from pyrites; to burn plaster, lime and cements, and to analyze and test their efficacy; to make and examine the most important alloys; to estimate clays for building and fire-brick, and for the manufacture of porcelain; to analyze fuels, slags and fluxes.

The student is required to go through a thorough course in assaying, treating ores of lead, silver, copper, mercury and gold. Attached to the Laboratory is a library of technological books, always open to the students for reference.

Detached from the Laboratory is a dark-room, which affords opportunity for photographic work. See also pages 55 and 61.

Modern Languages

See page 45 for a description of these courses.

English Literature and Rhetoric

The instruction in English is eminently practical and has special reference to the clear and forcible presentation of a subject by a student. The full course in English Literature is laid down on pages 46 to 48. The full course in Rhetoric is to be found on pages 48, 49. The course required of Engineering students is somewhat abridged so as to embrace those portions deemed most important for their special needs.

In the Senior year one of the required essays of each term will be upon a technical subject, prepared under the direction of the Professor of Civil Engineering, the object being to give the Engineering student practice in the preparation of reports upon Engineering subjects.

Engineering, General Course

The subjects of this course are so arranged as to harmonize with the seasons of the year suitable to field or other work. The course includes the following subjects:

Drawing and Descriptive Geometry.—The instruction in this department extends throughout the entire course. In the first term Freshman the student is instructed in free-hand drawing from the flat and from the object, and in free-hand lettering. In the second term he is instructed in the use of drawing instruments and the construction of geometrical problems, and lettering. In the third term Freshman, and first term Sophomore he obtains practice in plotting the surveys made in the field. Further instruction in Topographical Drawing is given in the first term Sophomore. Descriptive Geometry is begun in the second term Sophomore, and in addition to thorough instruction in the theory, an effort is made to illustrate by problems some of the most common applications in practice. Schroeder's and the Olivier models and the models of intersections of the Paris Polytechnic School are freely used. The collection of models is described on pages 114 and 115. In the third term instruction is given in Shades, Shadows and Perspective and the various projections. In the Junior year the work in drawing includes model and machine drawing and the solution of problems in Graphical Analysis. In the Senior year is given a thorough course in the

designing of Engineering structures, including detail drawings of constructions of wood and iron; this is followed by a course in Stereotomy, with drawings from the Stereotomy models of the Paris Polytechnic School. Practice in blue printing is made an important part of these courses.

Surveying.—The third term Freshman includes instruction and practice in the elementary operations in the field with chain and tape, compass, level and rod and transit. Whenever possible the class is exercised in actual work in laying out lots, surveying lands and computing areas, establishing grades for streets and roads and determining differences in elevation. In the first term Sophomore the subject of Topographical Surveying is taken up and instruction and practice are given in the various methods and instruments. Railroad Surveying is treated in the third term Junior and the students are given exercise in the principal field operations on railroad surveys, office and field location and staking out for construction. The subject of railroad construction and equipment is not treated until the first term of the Senior year.

Geodesy and Astronomical Surveying in the third term of the Senior year comprise a discussion of the figure of the earth; triangulation system; base lines; observations; reductions and adjustment, determination of time, latitude and azimuth; transformation of co-ordinates, map projection.

As a preliminary to instruction in each branch of surveying, a thorough study of the instruments employed is taken up, treating their geometrical, optical and mechanical relations; their adjustments, use and determination of their instrumental constants, errors and limits of precision.

Office computations, plotting and mapping are made an adjunct of field surveys.

Field practice forms an important part of all of the courses in surveying, the classes being divided into sections, and directed by the instructors.

When feasible, about three weeks of uninterrupted field and office practice will be given in the Junior or Senior year.

Applied Mechanics and Materials.—Applied Mechanics is commenced in the first term of the Junior year, and comprises the extension of Analytic Mechanics and the study of Graphical

Analysis, and their applications to engineering problems, operations and constructions, particularly the treatment of stresses, strains, deflections and deformations in elastic materials and structures due to extraneous forces. Closely allied to this are the studies of Hydraulics and Masonry, the former comprising the study of flow through orifices, weirs, pipes and channels, and the development of water power; the latter comprising the mechanics of foundations, piers, abutments, arches, retaining walls, dams, etc.

In conjunction with the above subjects is given the study of the production, preparation, strength and physical properties of the various engineering materials, including timber, stones, mortar, cement, cast iron, wrought iron and structural steel. Practice in Engineering Laboratory is an important adjunct to this study. This entire division, properly correlated, becomes the foundation of all rational engineering design and construction.

Engineering Design.—The courses in Applied Mechanics and Materials prepare the student to undertake the study of Engineering Design proper, which is done throughout the Senior year, as an important feature of the work in bridges, railroads, water-works, architectural engineering, etc. The exercises in this line of work are, as far as possible, assigned from professional practice, and the student is expected to carry out, from assigned data and conditions, the preliminary study, determinations of stresses, types, dimensions and details, and to turn in the results in the form of working drawings, diagrams and memoirs. There is a large collection of drawings of representative engineering structures in the department from which students can obtain correct ideas of modern practice in the designing of details and the methods of the various large companies engaged in this branch of construction.

Water.—The subject of water supply is considered in all its aspects. In the first term Junior is given a laboratory course in Chemistry, followed in the second term by a course in water analysis, accompanied by work in analysis of soil and air. In the third term Junior is given an elementary course in Hydraulics, followed in the Senior year by a fuller development of the principles as applied to the supply of water to cities and villages.

This is accompanied by a study of the sanitary aspects of the subject of water supply and preservation of the same from contamination. Some study is also made of pumping engines.

Highways.—The study of highways comprises a consideration of the highway as an element in the transportation and social system of the State, the principles of its advantageous location and proper construction; a study of the various modes of construction and the materials employed, its proper maintenance; systems of highway administration.

Streets and Pavements.—A study of the methods of laying out and grading streets and pavements, and of the various paving methods and materials and their treatment, with special reference to their economic and sanitary aspects.

Motors and Motive Power.—An elementary course in motors and motive power is given in the first and second terms Senior year, comprising a study of the sources of demand and supply of power, steam boilers, steam engines, gas engines, water wheels, electric motors, etc.

Engineering Law and Procedure.—Two hours per week, during the last term Senior year, are assigned to the study of the principles and procedure of commercial and financial transactions, contracts, agency, corporations, laws relating to land boundaries and titles, water courses, surveys, mining claims, etc.

Thesis.—Each candidate for graduation is required to present, on or before the first day of June of his graduation year, a satisfactory thesis on a subject that has been approved by the Professor of Civil Engineering. This thesis must be either a design for some engineering structure, process or operation; or an independent investigation of some principle, problem, or matter of engineering importance. Reviews of existing structures, plants or processes, unless of special educational value, will not be approved as subjects. This thesis is to be in a form prescribed at the time of approval of the subject, and is to be bound for deposit in the library of the Engineering School, and must be presented in this shape on or before the stipulated date. The thesis should be presented for the inspection of the Professor of Civil Engineering at intervals during its progress.

Sanitary Engineering Course

The course in Sanitary Engineering differs from the general Engineering course, by omitting the Astronomical Surveying, Geodesy and Railroad Construction, and substituting therefor Heating and Ventilation, House Drainage and Plumbing, Sewerage and Sewage Disposal, Sanitary Biology, Sanitary Codes and Laws, and an increase in the amount of Chemistry and Chemical Laboratory work.

Sanitary Condition of Houses.—In the first term Senior, will be given courses in Heating and Ventilation and in House Drainage and Plumbing. The latter course will have special attention given to it and methods of water supply and of the removal of house wastes of buildings in all locations, from the isolated country house to that in a thoroughly drained city, will be considered.

Sewerage and Drainage.—The study of systems of sewerage and drainage and sewage disposal will extend through the last term Senior. The comparative advantages of various systems will be shown and the details of construction and maintenance will receive careful attention.

A course of lectures in the third term Senior will present the basis for the preparation of sanitary codes and the principles upon which laws touching the subject of the public health are based.

Thesis.—A thesis upon some subject connected with Sanitary Engineering, under the general regulations stated on page 111 will be a requirement for graduation from this course.

Electrical Engineering Course

This course was first offered and students admitted to the lower classes in the fall of 1895. The course is now fully arranged and valuable facilities have been secured for it. Running parallel with the two other courses through the third year, it substitutes for Geodesy, Water Supply Engineering, Sewerage, Railroad Construction, Heating and Ventilation, Bacteriology and other allied work, in the General and Sanitary Engineer-

ing courses, an equivalent amount of work in Mathematical Theory of Electricity (continued), Electrical Transmission of Energy, Design of Dynamos and Direct Current Apparatus, Theory of Alternating Currents and Design of Alternating Current Machinery, and Electrical Laboratory work.

In addition to the laboratory equipment in electro-physics, the electrical laboratory equipped with direct and alternating current apparatus affords excellent opportunity for experimental work.

Through the active interest which the General Electric Company of Schenectady takes in technical education, an arrangement has been effected between the college authorities and the officials of the company, by which students in the Junior and Senior classes are admitted to the company's works at regular scheduled times under the direction of their instructor, with the privilege and opportunity of studying and inspecting the plant and operations, and of being regularly instructed therein by their instructor. This work will be systematically arranged and is to be given simultaneously with the corresponding class and laboratory work to which it will form an important and valuable adjunct.

This privilege of becoming familiar with the shops and machinery of the largest electrical manufacturing company in existence and the encouragement that this company offers to technical education add much to the value of the course here offered.

Voluntary Studies

Any of the studies of the Classical or of the Scientific course of the college may be taken by the Engineering students without extra charge. Many avail themselves of this opportunity for special study in Biology and Zoölogy, Mental and Moral Science, English, Logic, etc.

Instruments and Apparatus

This department is supplied with field instruments of the best description, comprising a large Theodolite suitable for refined geodetic operations, Transits, Surveyor's Compass, Prismatic Compass, Burneir's Compass, Solar Compass, Y Levels, the

Levels of Troughton, Egault, Lenoir and Burneir; Plane Table, Sextant, Octant, Mountain Barometers, Aneroid Barometer and a Chronometer.

The extensive private collection of models and instruments belonging to the late Professor Gillespie has been purchased for the Engineering School.

The collection of models in Descriptive Geometry and Stereotomy is very complete. The following are some of the most important:

The Olivier Collection.—This consists of about fifty models representing the most important and complicated ruled surfaces of Descriptive Geometry, particularly warped or twisted surfaces. Their directrices are represented by brass bars, straight or curved, to which are attached silk threads representing the elements or successive positions of the generatrices of the surfaces. Each of these threads has a weight suspended by it so as always to make it a straight line. These weights are contained in boxes sustaining the directrices and their standards. The bars are moveable in various directions, carrying with them the threads still stretched straight by the weights in every position they may take; so that the forms and natures of the surface which they constitute are continually changing, while they always remain ruled surfaces. In this way a plane is transformed into a paraboloid, a cylinder into a hyperboloid, etc.

These models were invented by the late Théodore Olivier, while Professor of Descriptive Geometry at the Conservatoire des Arts et Métiers, in Paris. One set of them is now deposited there, and a second is in the Conservatory of Madrid. Copies of some of them are to be found in most of the polytechnic schools of Germany. The Union College set is the original collection of the inventor, having been made in part by his own hands, and, after his death in 1853, retained by his widow till bought of her by Professor Gillespie, in 1855. It is more complete than that in the Paris Conservatoire. It may be worth noticing that the silvered plates on the boxes, reading "*Inventé par Théodore Olivier*," etc., were added by Madame Olivier, at her own expense, after the purchase, as a tribute to the memory of her husband, her own words being, "*Je tenais à ce que chaque instrument portât le nom du savant dont la réputation passera à la postérité.*"

Professor Bardin's (Paris) plaster models (seventy) of the INTERSECTIONS of prisms, pyramids, cylinders, cones, etc.

Schroeder's (Darmstadt) models (twenty) of elementary DESCRIPTIVE GEOMETRY. The planes of projection are in wood, and the lines and surfaces in metal; models illustrating Shades and Shadows.

Stone Cutting models (twenty) in plaster, selected from those of L'École Polytechnique of Paris.

Professor Bardin's models (ten) in plaster, of OBLIQUE ARCHES.

Groined and cloistered arch models (ten) in wood and plaster. Models of structures in stone, consisting of bridges, culverts, etc.

Winding-stair models in wood and plaster. Full sized models of voussoirs and skew-backs of an oblique arch.

Models in Topography.—French and German plaster models, giving all the different forms of ground, accompanied by topographical drawings, showing how to represent these forms by contour lines, hatchings, and shades from vertical and oblique light; models and maps in colored topography; a large model of Mont Cenis Pass, showing the wagon road and contour lines.

Architecture.—Models of the five orders of Architecture from L'École des Beaux Arts, Paris; portals; stairs; roofs; walls; buttresses; domes, etc.

Engineering.—Schroeder's models of joints, brick bonds, etc.; spur wheels; bevel wheels; cranes; pile drivers; various forms of water-wheels; pumps; cylinders; valves, eccentrics, etc.; steam engines.

Casts of St. Venant's models showing the changes of form in bodies subjected to flexure. Full sized model of the liquid vein measured by Poncelet and Lesbros.

Models of bridges of various systems, comprising truss, suspension, tubular and arch bridges; Doyne's Dynamometer Bridge Models showing, by means of dynamometer, strains at different points; models of roof trusses, arranged for using the dynamometer to show the different stresses.

Models of fortifications, illustrating Vauban's system; shot, shell, etc.

Models of culverts, piers, abutments, culvert heads, wing walls, rail sections, etc.

Physical Apparatus

(See page 54.)

Collections in the Department of Chemistry

In Mineralogy.—The Wheatley collection contains nearly 4,000 specimens of minerals, the results of the labor of Charles M. Wheatley. All of these have been labeled according to the nomenclature and order adopted by Dana. They are without exception open at all times to the students. They furnish an admirable means of practical illustration in Mineralogy. Among the rare and valuable specimens are those of Anglesite, Cerusite, Mimetite and Calcuprite, which in American specimens are equaled only by those in the British Museum. There are many fine specimens representing the noble metals from all parts of the world. There are few known species of minerals of which the collection does not contain some specimens.

In addition to this there is a large series of unlabeled specimens for crystallographic and blow-pipe examination.

In Metallurgy.—The college possesses a suite of ores of the useful metals, comprising over 1,000 specimens. These have been arranged to illustrate their mode of occurrence and geographical distribution. In addition are the fluxes, fuels, etc., used in obtaining the metals from the ores, together with the slags and metals themselves in various forms. There is a large number of models and drawings of stacks, furnaces, etc.; also suites of specimens of wood, charcoal, mineral coal, peat, etc., for physical inspection; also specimens of most of the useful alloys.

In Industrial Chemistry.—A large number of specimens of the materials used in the manufacture of the mineral and of some of the organic acids; the crude products themselves and the materials used in the manufacture of the alkalis, soaps, matches, black lead, candles, petroleum products; linseed, olive, castor, cottonseed and other oils; paper, porcelain, glass, fire and building brick, mortar and cements, beet and cane sugars, white lead and other paints, etc., etc.

Maps, Drawings, Etc.

This collection embraces a large number of maps, plates, profiles, topographical drawings and spherical projections; about fifty thousand engravings, lithographs, photographs, and detail drawings of engineering and architectural structures; working drawings of machines, bridges, buildings, etc.

Library

The students have the use of the College and Society Libraries. The former contains the Engineering and Scientific Library of the late Professor Gillespie. See page 59.

Physiology and Physical Education

(See page 57)

For catalogue or special information, address
OLIN H. LANDRETH, Schenectady, N. Y.

ORDER OF STUDIES

Courses Leading to Degree of B. E.

[The Freshman, Sophomore and Junior years are alike for the General, the Sanitary and the Electrical Engineering Course.]

Freshman Year

First Term

Hours per week.

- 3 French.
- 3 German.
- 3 Freehand Drawing.
- 5 Algebra.
- 1 Physiology.
- 1 Gymnastics.
- Narrative Essays.

Second Term

- 3 French.
- 3 German.
- 4 Spherical Trigonometry and Analytic Geometry.
- 2 Mensuration.
- 3 Mechanical Drawing.
- 1 Physiology.
- 1 Gymnastics.
- Descriptive Essays.

Third Term

- 3 French.
- 3 German.
- 3 Rhetoric.
- 4 Analytic Geometry.
- 4 Surveying and Plotting.

Sophomore Year

[Alike for all Engineering Courses.]

First Term

Hours per week.

- 5 Calculus.
- 5 Topographical Surveying.
- 3 Chemistry.
- 3 English Literature.
- 1 Physiology of Exercise.

Second Term

- 3 Calculus.
- 5 Mechanics.
- 2 English Literature.
- 3 Chemistry.
- 3 Descriptive Geometry.
- 1 Physiology of Exercise.
- One Essay and one Oration.

Third Term

- 5 Physics and Physical Laboratory.
- 3 Calculus.
- 3 Descriptive Geometry; Shades and Shadows.
- 3 Chemistry.
- 2 City Surveying.
- 1 Physiology of Exercise.
- One Essay and one Oration.

Junior Year

[Alike for all Engineering Courses.]

First Term

Hours per week.

- 5 Physics and Physical Laboratory.
- 4 Applied Mechanics.
- 3 Economic Geology.
- 2 American History.
- 3 Roads and Pavements.
- Rhetorical Exercises.

Second Term

- 5 Mechanics of Materials and Engineering Laboratory.
- 2 American History.
- 3 Machine and Shop Drawing.
- 2 Roads and Pavements.
- 1 Natural Perspective.
- 3 Astronomy.
- Rhetorical Exercises.

Third Term

- 4 Stresses in Structures and Graphical Analysis.
- 3 Hydraulics.
- 2 Thermodynamics.
- 3 Route Surveying.
- 3 Mathematical Theory of Electricity.
- 2 American History.
- Rhetorical Exercises.

GENERAL COURSE

Senior Year

First Term

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 2 Stereotomy.
- 2 Outlines of Architecture.
- 2 Railroad Construction.
- 2 Lithology and Mineralogy.
- One Literary Essay.
- One Technical Essay.

Second Term

- 3 Motors and Motive Power.
- 4 Engineering Design and Construction.
- 3 Water Supply Engineering.
- 2 Building Construction.
- 2 Method of Least Squares.
- 3 Sewerage.
- One Literary Essay.
- One Technical Essay.

Third Term

- 5 Engineering Design and Construction.
- 2 Engineering Law and Procedure.
- 4 Geodesy and Field Astronomy.
- 4 Electives.
- 1 Thesis.

SANITARY COURSE

Senior Year**First Term**

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 3 Heating and Ventilation.
- 2 Stereotomy.
- 2 Lithology and Mineralogy.
- 1 House Drainage and Plumbing.
 - One Literary Essay.
 - One Technical Essay.

Second Term

- 3 Motors and Motive Power.
- 4 Engineering Design and Construction.
- 3 Water Supply Engineering.
- 2 Building Construction.
- 3 Sewerage.
- 2 Structural Botany.
 - One Literary Essay.
 - One Technical Essay.

Third Term

- 5 Engineering Design and Construction.
- 3 Sewage Disposal.
- 2 Engineering Law and Procedure.
- 3 Bacteriology.
- 1 Sanitary Codes and Laws.
- 2 Electives.
- 1 Thesis.

ELECTRICAL COURSE

Senior Year

First Term

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 4 Mathematical Theory of Electricity.
- 4 Electrical Transmission of Energy.
One Literary Essay.
One Technical Essay.

Second Term

- 3 Motors and Motive Power.
- 2 Electrical Transmission of Energy.
- 2 Alternating Currents.
- 2 Engineering Design.
- 4 Dynamo Designing.
- 4 Electrical Laboratory.
One Literary Essay.
One Technical Essay.

Third Term

- 3 Alternating Current Machine Designing.
- 3 Station Design and Construction.
- 2 Electrical Transmission of Energy.
- 2 Alternating Currents.
- 2 Engineering Law and Procedure.
- 3 Electives.
- 1 Thesis.

ALBANY MEDICAL COLLEGE

MEDICAL DEPARTMENT OF

UNION UNIVERSITY

SEVENTIETH SESSION

ALBANY MEDICAL COLLEGE

The Medical College building, situated on Eagle street, Albany, is well appointed in its lecture rooms, laboratories, dissecting room and museums. The chemical laboratory is fitted with every requisite for the illustration of the lectures and the use of students, while the new Bender Hygienic Laboratory furnishes unexcelled facilities for instruction in histology, embryology, pathology, bacteriology and clinical microscopy.

The location of the college is such as to afford superior advantages to the student. The hospitals and dispensaries furnish an abundant supply of material for the illustration of clinical medicine and surgery, while the museums are especially rich in anatomical and pathological preparations. They contain the valuable morbid specimens accumulated by the late Drs. March, Armsby, McNaughton and Haskins, and the pathological specimens, the Sydenham Society plates on diseases of the skin and Böck's anatomical models added by Dr. Vander Veer.

With the session of 1897-'98 a four year course was inaugurated. The curriculum embraces lectures by professors and lecturers; recitations conducted mainly by instructors, and practical demonstrations, clinical teaching and laboratory work, in which the professors in the different departments are assisted by clinical assistants and demonstrators.

The Albany Hospital, St. Peter's Hospital, Child's Hospital, Albany Hospital for Incurables, County Hospital, South End Dispensary, Eye and Ear Infirmary, and dispensaries connected with each are, by the regulations of their governing boards, made available for clinical purposes to the students.

Appointments to positions on the house staffs of the Albany and St. Peter's Hospital, the Ellis Hospital at Schenectady, and others in neighboring places, are annually made and are competed for by the members of the graduating class.

TRUSTEES

WILLIAM L. LEARNED,
President.

SIMON W. ROSENDALE,
Vice-President.

JOHN H. JACKSON,
Treasurer.

CHARLES F. VAN BENTHUYSEN,
Secretary

ERASTUS D. PALMER,
JOHN F. RATHBONE,
CLARENCE RATHBONE,
JOHN M. CRAPO,
JAMES D. WASSON,
OSGOOD H. SHEPARD,
HENRY T. MARTIN,
CHARLES L. PRUYN,
ANDREW V. V. RAYMOND,
AMASA J. PARKER,

RICHARD V. DE WITT,
J. TOWNSEND LANSING,
JESSE W. POTTS,
EDWARD A. DURANT,
CLIFFORD D. GREGORY,
CHARLES TRACEY,
WILLIAM J. WALKER,
ALDEN CHESTER,
JOHN G. MYERS,
WILLIAM H. WEAVER,

MAYOR OF ALBANY, }
RECORDER OF ALBANY, } *Ex-officiis.*

CATALOGUES are sent with care, and graduates of the college changing their post-office address, or not receiving them, will please notify.

WILLIS G. TUCKER, M. D., *Registrar*,
Albany Medical College,
Albany, N. Y.

FACULTY

ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,
President of the University.

ALBERT VANDER VEER, M. D., PH. D., DEAN,
Professor of Didactic, Abdominal and Clinical Surgery.

MAURICE PERKINS, M. D.,
Professor of Chemical Philosophy and Organic Chemistry.

JOHN MILTON BIGELOW, M. D., PH. D.,
Emeritus Professor of Materia Medica and Therapeutics.

SAMUEL BALDWIN WARD, M. D., PH. D.,
Professor of Theory and Practice of Medicine and of Hygiene.

JAMES PETER BOYD, M. D.,
Professor of Obstetrics, Gynecology and Diseases of Children.

WILLIS GAYLORD TUCKER, M. D., PH. D., REGISTRAR,
Professor of Inorganic and Analytical Chemistry and Toxicology.

WILLIAM HAILES, M. D.,
Anthony Professor of Pathological Anatomy, Embryology, Histology and Fractures and Dislocations.

CYRUS STRONG MERRILL, M. D.,
Professor of Ophthalmology and Otology.

FREDERIC COLTON CURTIS, M. D.,
Professor of Dermatology.

HENRY HUN, M. D.,
Professor of Diseases of the Nervous System.

SAMUEL ROSEBURGH MORROW, M. D.,
Professor of Anatomy and of Orthopedic and Operative Surgery.

Albany Medical College

HERMON CAMP GORDINIER, M. D.,
Professor of Physiology.

HOWARD VAN RENSSELAER, M. D.,
Professor of Materia Medica and Therapeutics, and Adjunct
Professor of Theory and Practice of Medicine.

Adjunct Professors

JOSEPH DAVIS CRAIG, M. D.,
Anatomy. Demonstrator of Anatomy and Curator of the
Museum.

WILLIS GOSS MACDONALD, M. D.,
Surgery.

GEORGE BLUMER, M. D.,
Histology, Pathology and Bacteriology. Director of Bender
Hygienic Laboratory.

JOHN VINCENT HENNESSY, M. D.,
Materia Medica.

ANDREW MAC FARLANE, M. D.,
Medical Jurisprudence and Physical Diagnosis.

Clinical Professors

HERMAN BENDELL, M. D.,
Otology.

THEODORE F. C. VAN ALLEN, M. D.,
Ophthalmology.

CLINTON BRADFORD HERRICK, M. D.,
Railway Surgery.

ARTHUR GUERNSEY ROOT, M. D.,
Diseases of the Throat and Nose.

Lecturers

LEO HAENDEL NEUMAN, M. D.,
Symptomatology, Diseases of Stomach and Intestines and
Instructor in Theory and Practice.

WILLIAM OLIN STILLMAN, M. D.,
History of Medicine.

JESSE MONTGOMERY MOSHER, M. D.,
Insanity, Neurology and Electro-Therapeutics.

HARRY JUDSON LIPES, M. D.,
Obstetrics.

ARTHUR TURNER LAIRD, M. D.,
Clinical Microscopy.

Instructors

GEORGE EMORY LOCHNER, M. D.,
Obstetrics.

CHARLES HENRY MOORE, M. D.,
Ophthalmology and Otology.

THOMAS WILLIAMS JENKINS, M. D.,
Histology and Pathological Anatomy.

THOMAS ADDIS RYAN, M. D.,
Surgery.

WILFRED SYLVESTER HALE, M. D.,
Anatomy.

CLEMENT FRANK THEISEN, M. D.,
Throat and Nose.

LANSING BETTS WINNE, M. D.,
Clinical Medicine.

JAMES MANNING MOORE, M. D.,
Orthopedics.

Albany Medical College

CHARLES HARPER RICHARDSON, M. D.,
Surgery.

THEODORE JAMES BRADLEY, PH. G.,
Chemistry.

SPENCER LYMAN DAWES, M. D.,
Theory and Practice of Medicine.

WILLIAM HENRY HAPPEL, M. D.,
Therapeutics.

ARTHUR SAUTTER, M. D.,
Dermatology.

WARREN HARKNESS EVERETT, M. D.,
Embryology.

ARTHUR WELLS ELTING, M. D.,
Surgery.

JAMES WESLEY WILTSE, M. D.,
Materia Medica.

HENRY LARNED KEITH SHAW, M. D.,
Diseases of Children.

ALVAH HARRY TRAVER, M. D.,
Surgery.

EDGAR ROSCOE STILLMAN, M. D.,
Physiology.

EDGAR ALBERT VANDER VEER, M. D.,
Surgery.

Clinical Assistants

HARRY SEYMOUR PEARSE, M. D.,
WILLIAM HENRY GEORGE, M. D.,
MICHAEL DANIEL STEVENSON, M. D.,
WASHINGTON IRVING GOEWY, M. D.,
ROBERT HILL TEDFORD, JR., M. D.,
FRED NEWMAN GUYER, M. D.,

Students, 1900-01

Fourth Year

CHARLES JAMES BAUM.....	Albany
ARTHUR JOSEPH BEDELL.....	Watervliet
GEORGE SAMUEL BURNS.....	Warsaw
JOHN WILSON BURNS	Albany Rural Cemetery
ROBERT BEATLEY CASTREE.....	Westfield, Mass.
HAROLD DUNCAN COCHRANE, M. D.....	Albany
JOSEPH AMBROSE COX.....	Albany
THOMAS EDWARD DEVENY.....	Watervliet
EDWARD GERALD GRIFFIN.....	Bath-on-Hudson
JOHN MICHAEL GRIFFIN.....	Albany
EDWARD JOSEPH HANNAN.....	Watervliet
CLAYTON KENDALL HASKELL, 2nd.....	Albany
JOHN FRANCIS HEFFERNAN.....	Albany
ARTHUR FENWICK HOLDING.....	Albany
THOMAS FRANCIS JUDGE.....	Troy
JAMES EVERETT KELLEY.....	Deans Corners
JOSEPH WALDRON MOORE.....	Cohoes
JOHN BERTMAN NEARY.....	Watervliet
DANIEL DUANE PARRISH.....	Salem
NISHAN ALEXANDER PASHAYAN.....	Albany
WILLIAM BRINK ROSECRANS.....	Nassau
CLARENCE LEANDER SICARD.....	Amsterdam
GEORGE ALPHEUS SMITH.....	Lansingburgh
MICHAEL JOSEPH THORNTON, A. B.....	Albany
JACOB WACHSMAN.....	Brooklyn
MAX WACHSMAN.....	Brooklyn
LELAND ORLO WHITE.....	Fort Plain
CHARLES LANSING WITBECK.....	Cohoes

Third Year

LaSALLE ARCHAMBAULT.....	Cohoes
THOMAS CARNEY.....	Schenectady
ELWIN CHAMPLIN.....	Griffins Corners
KENT STANLEY CLARK.....	Oneonta

JOHN BOWMAN CONGDON	Albany
HUGH MICHAEL COX.....	Port Jervis
ROBERT ARCHIBALD GOW.....	Schuylerville
JOHN HENRY GUTMANN, B. S.....	Albany
STILLMAN SMITH HAM, PH. B.....	Schenectady
DANIEL JAMES HOYT, A. B.....	Amsterdam
EARL HOLCOMB JACKSON.....	Jordan
URBAN THOMAS KEMBLE.....	Kingston
FREDERICK HUBERT LADD.....	Sacketts Harbor
FRED E. LETTICE.....	Sprout Brook
MOSES JOSEPH MANDELBAUM.....	Albany
JOSEPH MARK, PH. B.....	Amsterdam
EDWIN ALONZO MASON.....	Berlin
HENRY EARLE MERENESS, JR.....	Albany
WILLIS EDGAR MERRIMAN, JR., PH. B.....	Albany
FREDERICK CORNWALL REED.....	Cambridge
FRANK MALCOM SULZMAN.....	Waterford
CLIFFORD WALTER SUMNER.....	Pownal
JUNIUS PARKER TALMADGE.....	Westfield, Mass.
ELBERT GOODMAN VAN ORSDELL.....	Hudson
CHARLES P. WAGNER.....	Fort Plain

Second Year

SAMUEL HALCOM BASCH.....	Rondout
HOWARD ARTHUR BASSETT.....	Martinsburg
JAMES MARMADUKE BODDY, A. M.....	Troy
FRED EARNEST BOLT.....	Masonville
DONALD BOYD, A. B.....	Fonda
J. HOWARD BRANAN.....	Albany
JOHN EDWARD CANFIELD.....	Johnstown
HENRY MILLIGAN CHANDLER.....	South Orange, N. J.
SYLVESTER CORNELL CLEMANS.....	Gloversville
RUSSELL CLUTE.....	Amsterdam
ARTHUR JUDSON COLE.....	Haverhill, Mass.
HERBERT THOMAS CROUGH.....	Canajoharie
ARCHIE IRVING CULLEN.....	Watervliet
ARCHIBALD JOHN DOUGLAS.....	Southampton, Mass.
EDWIN MAURICE GRIFFITH.....	Steuben
CONRAD ROWLAND HOFFMAN.....	Selkirk

REUBEN BURDETT HOYT.....	Deposit
FRANK KEATOR.....	Accord
FREDERICK JOHN MAC DONALD.....	Watervliet
CHARLES RICHARD MARSH.....	Oneonta
FRANK CLAY MAXON, JR.....	Chatham
MILES AMBROSE MC GRANE.....	Watervliet
JOHN CRAPO MERCHANT, A. B.....	Nassau
ADDISON ROBERT MILLER.....	Rensselaer
WILLIAM LEO MULCAHY.....	Albany
THOMAS STEPHEN AUGUSTINE O'CONNOR.....	Lansingburg
MARK M. O'MEARA.....	Plattsburg
GEORGE EARNEST POOR.....	South Framingham, Mass.
VIRGIL DURAL SELLECK.....	Glens Falls
MILLARD FRANCES SHAFER.....	Cobleskill
EDWIN FOREST SIBLEY.....	Bennington, Vt.
FRANK TEMPLETON SMITH.....	Troy
GEORGE HENRY HUMPHREY SMITH.....	Little Falls
CHESTER ERASTUS HIDLEY TRACY.....	Troy
JAMES NEWELL VANDER VEER, A. B.....	Albany
ISAAC ERNEST VAN HOESEN.....	Medway
HARRY WILLIAM VICKERS.....	Roseboom

First Year

GEORGE LAY BRANCH.....	East Springfield
CHARLES WILLIAM CHAPIN.....	Unadilla Center
ARTHUR PRESTON CLARK.....	Jordan
CHESTER THOMPSON COBB.....	Southampton, Mass.
MORRIS COHEN, PH. G.....	Albany
MILES JACOB CORNTHWAITE.....	Lansingburgh
JOHN ISAAC COTTER.....	Poughkeepsie
MARCUS ALBERT CURRY.....	Voorheesville
HARRY AUSTIN DAME.....	Albany
ARTHUR THOMAS DAVIS.....	Utica
THOMAS JOSEPH DOWD.....	Cohoes
SILAS LORENZO FILKINS.....	Albany
FRANK HENRY FISK, JR., B. S.....	Albany
LELAND DELOS FOSBURY, A. B.....	Sidney
JOSEPH NICHOLS BENNETT GARLICK.....	Albany
WILLIAM ENTWISTLE GARLICK.....	Fall River, Mass.
EVERAL C. HAVILAND.....	Wolcott

CROMER HOFFMAN.....	Mechanicville
HAROLD ELIPHALET HOYT, A. B.....	Cambridge
GEORGE JOHN JENNINGS.....	Charlton
WILLIAM GEORGE KEENS.....	Albany
ARTHUR CHARLES KLINE.....	Port Leyden
GEORGE SPENCER LAPE.....	Mechanicville
KENNETH KENYON LINSON.....	Kingston
WILLIAM EMANUEL LOEBLE.....	Troy
HARRY LOVEJOY LOOP.....	Cohoes
HORATIO SEYMOUR MATTIMORE.....	Albany
DENNIS ALPHONSUS MURPHY.....	Gloversville
ROBERT JOSEPH O'BRIEN, JR., B. S.....	Watervliet
DANIEL VINCENT O'DONNELL.....	Bennington, Vt.
DANIEL VINCENT O'LEARY, JR.....	Albany
JOSEPH DAY OLIN, A. B.....	Watertown
OMER GEORGE PAQUET.....	Cohoes
JOHN HENDRY REID.....	Troy
BURT LUVERNE SHAW, PH. G.....	Lansingburgh
CHARLES JAY SHAW.....	Corinth
BENJAMIN J. SINGLETON.....	Glens Falls
EDWARD AUGUSTINE STAPLETON.....	Hoosick Falls
LEONIDE GEORGE SURPRENANT.....	Cohoes
ARTHUR WESLEY THOMAS.....	Middle Granville
RICHARD HENRY VAN DENBURG.....	Medway
ALBERT VANDER VEER, JR., A. B.....	Albany
ALFRED LEROY WARNER.....	Troy
FRANK BARTON WHEELER.....	Troy
FRANK EDWARD WHITE.....	Union
GUY VAIL WILSON.....	Masonville
TREVOR CRANDALL YATES.....	New Lisbon

CALENDAR, 1901-1902

1901.

Regular winter session begins,	Tuesday, September 24.
Thanksgiving vacation begins,	Wednesday, November 27.
Lectures resumed,	Monday, December 2.
Christmas vacation begins, .	Saturday, December 21.

1902.

Lectures resumed,	Monday, January 6.
Commencement,	Wednesday, April 30.

PRELIMINARY EXAMINATION.—The preliminary examination of medical students is under the control of the Board of Regents of the University of the State of New York. Those contemplating the study of medicine should apply to the High School Department, University State of New York, Albany, by letter or otherwise, if information concerning this examination further than that given in the catalogue of the Medical College is desired. One of the examinations will be held in Albany, September 24-26, 1901.

MID-WINTER WRITTEN EXAMINATIONS in all the departments are held before the Christmas vacation. A printed schedule of these examinations is furnished the class.

Course of Instruction

The four years' graded course now required of all candidates for the degree of doctor of medicine embraces the following subjects:

First Year

1. **Anatomy**—three lectures; one recitation; ten hours dissection, six to ten weeks. 2. **Inorganic Chemistry**—three lectures; four hours laboratory; one recitation. 3. **Physiology**—two lectures; one recitation. 4. **Histology**—one lecture; four hours

laboratory; one recitation. 5. **Materia Medica**—two lectures; one recitation. 6. **General surgical clinic**—two hours (optional)

Lectures 11; laboratory 8 hours; dissection 10 hours, part session; recitations 5; clinics 2.

Second Year

1. **Anatomy**—three and a half lectures; one recitation. 2. **Organic chemistry**—two lectures; one recitation. 3. **Physiology**—two lectures; one recitation. 4. **Therapeutics**—one lecture; one recitation. 5. **Medicine**—three lectures; one recitation. 6. **Surgery (minor)** one lecture; one recitation. 7. **Bacteriology and Pathology**—one lecture; five hours laboratory; one recitation. 8. **Embryology**—laboratory, half the term. 9. **Clinics**—three hours surgical.

Lectures 13½; laboratory 5½ hours; recitations 7; clinics 2.

Third Year

1. **Practice of medicine**—two lectures; one recitation. 2. **Clinical microscopy**—two and a half hours laboratory. 3. **Therapeutics**—two lectures; one recitation. 4. **Electro-therapeutics**—one lecture half the term. 5. **Obstetrics**—two lectures; one recitation. 6. **Pediatrics**—one lecture. 7. **Diseases of the nervous system**—one lecture; one clinic. 8. **Surgery (minor, pathology, operative, fractures, dislocations)**—four lectures; two recitations. 9. **Physical diagnosis, etc., etc.**—section work, three hours. 10. **History of medicine and railroad surgery**—each one lecture half the term. 11. **Special clinics**—one hour. 12. **Clinics**—two hours medical; three surgical.

Lectures 13½; laboratory 2½ hours; recitations 5; section work 3; clinics 7.

Fourth Year

1. **Practice of medicine**—four lectures; one recitation. 2. **Diseases of nervous system**—one lecture; one clinic. 3. **Gynecology**—one lecture. 4. **Obstetrics**—one lecture; one recitation. 5. **Surgery (including orthopedics)**—three lectures; one recitation. 6. **Medical jurisprudence, hygiene**—one and a half lectures. 7. **Specialties**—one recitation. 8. **Conferences**—one

medical; one surgical. 9. **Insanity**—one lecture, half the term. 10. **Otology**—one lecture, half the term. 11. **Special clinics**—four hours. 12. **Clinics**—two hours medical, three surgical. 13. **Section work**—four hours.

Lectures 12½; recitations 4, conferences 2; clinics 10; section work 4 hours.

The order of instruction for the ensuing session will be found in the catalogue of the Medical College, and may be obtained by application to the Registrar.

Laboratories

Practical Chemistry.—The chemical laboratory is well furnished and conveniently arranged, each student having a desk and reagents for his own use, and being supplied with all necessary apparatus. The laboratory course is preceded, since although some knowledge of chemistry is highly desirable none is now *required* at entrance, by a series of lessons upon chemical nomenclature, notation and the essential principles of theoretical chemistry, including the laws of combination and valence, and these subjects are therefore more briefly treated in the regular lecture course. The practical laboratory work includes tests for those metals and acids, which, in combination, are important as constituents of medicinal compounds or as poisons, together with the separation of the chief groups and the examination of unknown substances. The more important toxicological and urinary tests are performed and all chemical reactions are written upon the blackboard, discussed by the class, and entered upon their notes.

Histology, Pathological Anatomy and Bacteriology.—With the session of 1896-97 the efficiency of the work in these departments was greatly increased by the opening of the BENDER HYGIENIC LABORATORY to the students of this school. This building was erected by Mr. Matthew W. Bender, of Albany, and is thoroughly equipped with the most modern apparatus necessary for the study of embryology and histology, pathological anatomy and bacteriology. Practical work in these branches is obligatory upon all students, and in this laboratory every facility is furnished for acquiring a thorough knowledge of these important subjects.

In histology each student is taught the technique of the microscope, and is instructed in the preparation, cutting, staining and mounting of specimens and in the structure of the several tissues and organs of the body. Illustrated note-books, with outlines, are furnished, and each student required to fill out full details from the examination of mounted specimens.

In embryology, pathological anatomy and bacteriology, the courses are very complete, and a practical course in clinical microscopy is provided during the third year. Students desiring to do so will be allowed and encouraged to pursue original investigations in the laboratory.

The building contains a commodious and well-lighted amphitheatre, in which autopsies are held in the presence of students.

Practical Clinical Courses

In order to thoroughly familiarize students with the practical work of their profession, the fourth year class is divided into sections of six or eight men, and the course so arranged that all sections are simultaneously engaged in the out-patient departments of the various hospitals in examining and treating patients under the supervision of the out-patient physicians. Thus in the course of the school year the men in each section acquire practical knowledge in general medicine, general surgery, dermatology, neurology, otology, laryngology, ophthalmology, rhinology, diseases of children and infants, infant feeding, diseases of the rectum and genito-urinary tract, operative surgery, orthopedic surgery, operative obstetrics, electro-therapeutics and medical technique.

Fees and Expenses

All fees are payable in advance, and are as follows: For matriculation, five dollars, payable each year; for each lecture course, one hundred dollars, but a ticket entitling to attendance upon four courses may be obtained on payment of three hundred dollars in advance. Dissection, ten dollars, which is required the first year and optional during the other years of the course; dissecting material is free, and there are no incidentals in this department. Courses in the chemical laboratory, and in histology, ten dollars each; in bacteriology and pathology, fifteen dollars; and in embryology, and clinical microscopy, five dollars

each. The graduation fee is twenty-five dollars, which must be paid to the registrar before the candidate can be admitted to an examination.

The cost of living in Albany is less than in most other cities of its size. The janitor of the college keeps a list of boarding houses at which good rooms and board can be obtained at from four to five dollars a week or upwards, and by clubbing together students can live comfortably at still lower rates.

Requirements for Graduation

The candidate must be twenty-one years of age, and exhibit a certificate from a physician or surgeon, duly authorized by law to practice his profession, that he has studied medicine and surgery under his instruction, after the age of eighteen, during the period required by law in this state, and he must present evidence of having complied with the law concerning preliminary examination.

He must have attended not less than four regular courses of lectures, of which the last shall have been at this college. Students who have attended one or more courses of lectures at other recognized medical colleges, who may desire to be admitted to advanced standing in this college, will be credited with the work they may have done and with examinations they may have passed, other than those of the senior year, if satisfactory evidence of such attendance and of the passing of such examinations is presented. Students in Union College having the profession of medicine in view are permitted to take the first year studies of the Albany Medical College as a substitute for the studies of the first two terms of the senior year. This enables such students to lessen the time of their academic and professional studies by one year.

He must be of good moral character.

He must maintain a satisfactory standing during his course and pass a satisfactory final examination in the several branches taught.

Regular and punctual attendance is required, and matriculation tickets are endorsed with attendance at the end of the term.

For catalogues or further information, address

WILLIS G. TUCKER, M. D., Registrar,
Albany, N. Y.

February 1, 1901.

ALBANY LAW SCHOOL

LAW DEPARTMENT

UNION UNIVERSITY

FIFTY-FIRST YEAR

1901-1902

TRUSTEES

AMASA J. PARKER,
President.

SEYMOUR VAN SANTVOORD,
Vice President.

JAMES W. EATON,
Treasurer.

CHARLES J. BUCHANAN,
Secretary.

ANDREW V. V. RAYMOND,
MARCUS T. HUN,
J. NEWTON FIERO,
DANFORTH E. AINSWORTH,
D. CADY HERRICK,

ALTON B. PARKER,
CHARLES C. LESTER,
ALONZO P. STRONG,
JAMES LANSING,
JUDSON S. LANDON,
EDWARD P. WHITE.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President of the University.

J. NEWTON FIERO, LL. D., DEAN,
Procedure, Equity, Torts.

JAMES W. EATON,
Evidence, Contracts, Bankruptcy.

ALBERT C. TENNANT,
Criminal Law, Real and Personal Property.

JAMES F. TRACEY,
Corporations.

LEWIS R. PARKER,
Bailments.

FLETCHER W. BATTERSHALL,
Elementary Law, Domestic Relations.

ALVAH S. NEWCOMB,
The Statutes of New York.

Special Lecturers

HON. ALTON B. PARKER,
Development of the Law.

HON. IRVING G. VANN, LL. D.,
Insurance.

HON. JUDSON S. LANDON, LL. D.,
Constitutional Law.

HON. D. CADY HERRICK,
Municipal Corporations.

HON. ALDEN CHESTER,
The Federal Judicial System.

HON. SIMON W. ROSENDALE,
The Civil Law.

ANDREW MACFARLANE, M. D.,
Medical Jurisprudence.

HON. WALTER E. WARD,
Patents, Copyrights and Trade Marks.

STEPHEN B. GRISWOLD,
Books and Their Uses.

ALBANY LAW SCHOOL

This School is among the oldest institutions of the kind in the country, having been established in 1851, and its graduates number many of the most successful men in the profession. The School is and has been largely represented in the Executive, Judicial and Legislative departments of this and many other States, as well as of the federal government.

It became a part of Union University in 1873, and begins its fiftieth year as a law school with the coming scholastic year. During its long and successful career it has, in common with other law schools, done much to demonstrate what was at one time doubtful, but is now accepted almost as an axiom, that a course at the law school is a well-nigh necessary prerequisite to a successful professional career. Its instructors have always been men of repute and standing, both for professional learning and personal character.

Local Advantages

The local advantages of the city of Albany, as the seat of a professional school, cannot be overrated. It is the capital of one of the leading States in the Union, whose Legislature is in session here for the third part of every year, affording opportunities for observing the machinery of legislation, and of listening to learned discussions of important governmental and social questions. It is easily accessible, remarkably healthful, and the scene of great business and professional activity. It is large enough to afford its inhabitants all the means of culture and recreation naturally to be looked for in a city, while it is not so large as to make the cost of living burdensome, even to persons of extremely limited means.

Facilities for Study

The facilities afforded the students for reading and study are unsurpassed.

Besides the convenient and well chosen library of the school, accessible to the students at all hours of the day and evening,

the students have the privilege of using the State Law Library, the most extensive and best selected in the United States, consisting of 65,000 volumes.

With free access to these libraries the student may be relieved to a great extent from purchasing text-books.

Academic Year

The academic course, leading to the degree of LL. B., is two years, divided into two semesters, each. Students may enter at the beginning of any semester. The scholastic year for 1901-1902 begins September 24.

Requirements for Admission to the Senior Class

Any student not a college graduate who has completed two years of required legal study, after conforming with the requirements of the Regents as to general education, or any college graduate who has completed one year of such study after graduation, and any student presenting a certificate that he has satisfactorily completed one year of study at a law school of recognized standard, will be admitted to the senior class without examination, upon production of the Regents' and clerk's certificates, and will be graduated in the same manner as students have heretofore been graduated in the one year course, and will receive a certificate for the time spent at the school; but the degree of LL. B. will be conferred only upon students who have completed the entire course of two years at one or more law schools.

Requirements for Admission to the Junior Class

Any student who has conformed to the requirements of the Regents as to general education, or satisfies the Faculty that he will so conform to such requirements within the year allowed by the Regents for that purpose, after commencing the study of law, may enter the Junior class, and upon completion of the two years course and passing the required examination will be graduated with the degree of LL. B.

Methods of Instruction

Instruction is given by lectures involving a free use of simple text-books in connection with leading cases. Instruction is

also afforded by the study and discussion of selected cases, which are memorized. Moot courts are frequently held by a professor assigned for that work.

Examinations

Written examinations will be held at the close of each semester, and no student will be allowed to continue his studies who does not maintain a proper standard both in deportment and work. This rule will be rigidly enforced, so that a certificate of attendance upon the Albany Law School for any given period will be evidence that the time has been honestly and studiously devoted to the study of the law.

Requirements for Graduation

Candidates for graduation in one year course must have attended during a full course of two semesters; must have passed in all examinations, and conformed to all requirements.

Candidates for the degree of LL. B., must have attended two full years, passed in all examinations and conformed to all requirements.

Tuition

The fees for tuition are payable in advance as follows: For the full course of one year tuition, \$100; matriculation fee, \$10; diploma fee, \$2, or \$60 for the first semester and \$52 for the second. For the full course of two years and degree of LL. B., tuition \$100 each year; matriculation fee, \$10; degree, \$5, or \$60 for the first semester and \$50 for each semester thereafter, except the last, which will be \$55.

For members of the bar of this or other states, a deduction from the above rates of \$25 per year will be given.

Special students will be admitted at special rates.

No deviation will be made from the requirement, that tuition shall be paid in advance, unless by special arrangement before the student enters the school, based on satisfactory reasons.

No fees will be returned on account of non-attendance for any cause, but when a whole term is necessarily lost, the student may attend the corresponding term of the next year without additional charge.

Board, Etc.

The price of board in Albany varies, according to the accommodations offered, or required, from \$4 to \$7, including room, fuel and light. *Students intending to enter the school are particularly requested to inform the secretary, W. R. Davidson, Esq., in advance, if possible.* A list of boarding houses is kept by the secretary for the information of students, and upon application to him at the office in the building they will be assisted in securing satisfactory accommodations.

For catalogue or other information, address.

THE ALBANY LAW SCHOOL,
Albany, N. Y.

Students**Senior Class—1900-1**

CHARLES H. F. REILLY.....	Albany
WILLIAM A. DAVIDSON.....	Cooperstown
HENRY HIRSCHFELD.....	Albany
DUNCAN DOUGLAS.....	Albany
HAROLD JAY HINMAN.....	Albany
ROBERT M. EAMES.....	Albany
NORTHRUP R. HOLMES.....	Troy
WILLIAM H. A. MILLS.....	Albany
WILLIAM H. BUSHNELL.....	Windsor
JAMES F. HENNESSY.....	Watervliet
FRANK R. KEESHAN.....	Albany
HARRY E. KELLER.....	Cuba
HARRY E. CLINTON.....	Troy
CHARLES J. RUSSELL.....	Hinesburgh, Vt.
MICHAEL J. DRISCOLL.....	Albany
DAVID F. LITTLE.....	Cohoes
LESLIE M. SAUNDERS.....	Dickinson Center
WM. F. MORRIS.....	West Pitson, Pa.
H. WESTLAKE COONS.....	Deposit
C. G. CUNNINGHAM.....	Albany
JAMES V. COFFEY.....	Troy
EDWARD B. PARTRIDGE.....	Phelps
ELON GILBERT GALUSHA.....	Rochester
H. BRADLEY CARROLL.....	Rochester
TIBBITTS WALKER.....	Albany
FRANK X. SULLIVAN.....	Troy
DAYTON FULLER SMITH.....	Hamilton
FRED H. EGGERS.....	Cohoes
CHARLES J. HERRICK.....	Albany
WILLIAM M VERBECK.....	Ballston Springs
EDWIN H. VAN DYCK.....	West Coxsackie
STANLEY B. SHERMAN.....	Coxsackie
CHARLES F. DOYLE.....	Cohoes
EDWARD MONAHAN.....	Johnstown
J. EDWARD LUNDRIGAN.....	Rushford
GEORGE O. TUCK.....	Saratoga Springs

CLARENCE E. CONANT.....	Camden
WILLIAM P. WILFERT.....	Ilion
CHARLES C. ANNABEL.....	Cameron
JAMES A. QUINN.....	Albany
ROBERT FRAZIER.....	Amsterdam
FREDERICK E. W. DARROW.....	Kingston
CHARLES D. DEYO.....	Kingston
JOSEPH DELANEY.....	Albany
WM. LLOYD WIDDEMER.....	Albany
G. LINN PRESCOTT.....	Rome
DARIUS PECK.....	Hudson
R. MORRELL HARZBERG.....	Hudson
MICHAEL E. McTYGUE.....	Saratoga
WM. E. FITZSIMMONS.....	Albany
CHESTER A. VAN ARSDALE.....	Castile
DANIEL CASEY, JR.....	Albany
WILLARD J. SAUNDERS.....	Dickinson Center
WILLIAM J. F. HOGAN.....	Albany
JOHN H. MORTON.....	Oakland, Vt.
FOX SPONABLE.....	Nelliston
GEORGE M. VELIE.....	Watkins
FRANCIS J. SHAFFER.....	Ilion
D. M. HAZELTON.....	Gouverneur
JOHN C. LAMON.....	Watertown
CHARLES E. NORRIS.....	Carthage
RAY WALDO MERRILL.....	Carthage
RICHARD S. TERRY.....	Watertown
JOHN GIBSON HINMAN.....	Addison
GUY O. HINMAN	Addison
J. W. RUSSELL.....	Glens Falls
HOWARD H. BORST.....	Cobleskill
MARTIN S. MIX.....	Schoharie
FREDERICK N. RUTAN.....	Menands
JOHN PALLACE, JR.....	Clarkson
ARTHUR RICHARDSON.....	Watts Flats
WILLIAM A. GOLD.....	Lockport

Junior Class—1900-1

JOHN F. BRADY.....	Albany
GEO. A. HOLCOMBE.....	Hartford, Conn.

MILLER P. ALLEN.....	Penfield
FRANK A. AGNEW.....	Plattsburgh
AZRO L. BLAKE.....	Nicholville
RALPH J. HAWKINS.....	Islip
GEO. S. McMILLAN.....	Rochester
PAUL M. PELLETREAU.....	Ballston Springs
WILBER W. CHAMBERS.....	Glens Falls
MELVIN T. BENDER.....	Albany
RAYMOND FLINN.....	Albany
H. G. HOLAHAN.....	Watervliet
BENJAMIN B. HUTCHINS.....	Mechanicville
WILLIAM E. LOEBLE.....	Troy
STEPHEN S. READ.....	Bath
ANDREW C. FENTON.....	Andes
JOHN ALLEN RATHEOE.....	Morton, R. I.
HERBERT G. POTTER.....	Glens Falls
DUDLEY B. WADE.....	Albany
LEVI R. CHASE.....	Theresa
HUGH WEBSTER DARRIN.....	Addison
FRANK M. HICKOK.....	Albany
GEORGE E. PIKE.....	Sanborn
JAMES J. NOLAN.....	Albany
JOHN J. P. MARQUETTE.....	Owego
JOHN J. McMULLEN.....	Schenectady
ERNEST L. BOOTHBY.....	Rensselaer
GORDON G. HARRIS.....	Alton
EDWARD C. CONWAY.....	Albany
JAMES T. KNAPP.....	Syracuse
BRUCE N. MARTIN.....	Watertown
THOMAS F. J. McDERMOTT.....	Albany
HARRY HOWARD.....	Fort Hunter
RUTHERFORD W. KATHAN.....	Conklingville
ROBERT B. JONES.....	Whitesboro
OLIVER EDWARD FENGAR.....	New London, Conn.
GEORGE C. SHELDON.....	Troy
BENJAMIN D. HAIGHT.....	New Berlin
RANSOM H. GILLET.....	Troy
ALBERT R. DeYOUNG.....	Alexandria Bay
CHARLES R. WILTSE.....	Alexandria Bay
GEORGE J. MOORE.....	Fort Covington

LESTER T. HUBBARD.....	Cohoes
ANDREW J. HANMER.....	Long Lake
DOUGLAS W. PAIGE.....	Schenectady
CHARLES W. U. SNEED.....	Newburgh
CLAYTON G. CHANEY.....	Hermon
PEDRO G. AMADOR.....	Camuy, Porto Rico
EZRA A. BARNES.....	Oswego
GEO. H. SMITH.....	Cohoes
RALPH S. IVES.....	Margaretville
DAVID WILLIAM WOOLSEY.....	Milton
GEORGE B. McCARTER, JR.....	Salem
JOHN W. McLINDON.....	Albany
MORRIS H. SHEDD.....	Lowville
ERSKINE C. ROGERS.....	Sandy Hill
NEIL M. SCULLY.....	Mittineague, Mass.
CECIL C. VAN VALKENBURGH.....	Catskill

ALBANY COLLEGE OF PHARMACY

DEPARTMENT OF PHARMACY OF

UNION UNIVERSITY

ALBANY COLLEGE OF PHARMACY

The Albany College of Pharmacy was created by act of the Board of Governors of Union University, June 11, 1881, and constitutes the *Department of Pharmacy of Union University*. It was incorporated as the "Albany College of Pharmacy," August 27, 1881.

The exercises of the college are held in the Albany Medical College building, on Eagle street, distant but a block from the Capitol. The lecture rooms and laboratories of this commodious and well arranged building are perfectly adapted to the needs of the College of Pharmacy, and furnish to the faculty the very best facilities for imparting instruction. The lectures are delivered in the chemical lecture room on the first floor, adjoining which is the large and well fitted chemical laboratory, where instruction is given to the classes in practical chemistry. The pharmaceutical laboratory is thoroughly equipped and is in charge of a competent director who superintends the work in this department.

The previous general education of a student in any college has much to do with the amount of benefit to be derived from the college course, and in justice to the student and the college itself, this institution, in connection with others of the teaching colleges of Pharmacy, now requires of those entering as regular students for the course, a knowledge of the ordinary English branches as taught in the grammar schools of this State.

BOARD OF TRUSTEES

WILLIAM J. WALKER,
President.

CHARLES NEWMAN,
Vice-President.

CHARLES H. GAUS,
Treasurer.

DE BAUN VAN AKEN, PH. G.,
Secretary.

ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,

WILLIS G. TUCKER, M. D., PH. D.,

JOHN M. BIGELOW, M. D.,

DOUW H. FONDA,

ARTHUR L. ANDREWS,

OTTO SCHOLZ.

FACULTY

ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,
President of the University.

WILLIS G. TUCKER, M. D., PH. D., . . . 4 Lancaster Street
Professor of Chemistry.

ALFRED B. HUESTED, M. D., PH. G., . . . 144 State Street
Professor of Botany and Materia Medica.

GUSTAVUS MICHAELIS, PH. G., 2 to 8 Broadway
Professor of Pharmacy.

Other Instructors

DE BAUN VAN AKEN, PH. G.,
Lecturer on Pharmacy.

THEODORE J. BRADLEY, PH. G.,
Instructor in Chemistry.

FRANK RICHARDSON, PH. G.,
Instructor in Materia Medica and Director of Pharmaceutical
Laboratory.

THOMAS W. JENKINS, M. D.,
Instructor in Microscopy.

Board of Examiners

LOUIS SAUTTER, PH. G. CHARLES H. GAUS, ESQ.
EDWIN F. HUNTING, PH. G.

Students**Senior Class**

FRED L. ALBEE	Walton
UBERT F. BROWER.....	Cohoes
ARTHUR K. BROWN.....	Chatham
ORVILLE S. CLARK.....	Albany
JACOB COHEN.....	Albany
HERBERT A. DE LA MATER.....	Athens
CASPER J. DOBROCINSKI.....	Schenectady
FRANCIS H. DONALDSON.....	Gilbertsville
JOHN H. DWYER.....	Oswego
CHARLES H. FOX.....	Boonville
FRANK H. HAVENS.....	Albany
VERNE HICKS.....	Syracuse
WILLIAM B. HOGAN.....	Albany
WILLIAM A. LARKIN.....	Plattsburgh
JESSE W. LEAVITT	Dolgeville
JAMES H. MCCULLOUGH.....	Cohoes
GEORGE L. MESNIG.....	Troy
WALTER J. MOFFITT.....	Troy
LEON F. MONTGOMERY.....	Watervliet
EUGENE L. MYER.....	Saugerties
CHARLES M. OTIS, JR.....	Tivoli
FRANK M. POST.....	Hinesburg, Vt.
RALPH A. PURINTON.....	Bristol, Vt.
SAMUEL T. QUINN.....	Ballston Springs
DANIEL RICE.....	Cambridge
CATHERINE ROSS.....	Hoosick Falls
JOSEPH P. SEGUIN.....	Rouses Point
GEO. S. SLADE.....	Oneonta
CHARLES H. SMITH, JR.....	Albany
GEORGE L. SOUTHWORTH.....	Syracuse
GUY G. STEPHENSON.....	Johnstown
CHARLES N. STEWART.....	Rensselaer
EARLE J. VOSBURGH.....	West Copake
JAMES H. WALSH.....	Catskill

Junior Class

SAMUEL ARMSTRONG.....	Pine Bush
F. CLAYTON BARROWS.....	Canton
LAURENCE H. BURKE.....	Oneonta
GERARD W. CLARE.....	Utica
PATRICK J. DONOVAN.....	Albany
ARTHUR J. DORAN.....	Valley Falls
S. ERNEST DORN.....	Johnstown
GEORGE H. DUPONT.....	Plattsburgh
JAMES S. FARLEY.....	Matteawan
WILLIAM J. FRIDAY.....	Schenectady
EDWARD A. GILLANS.....	Amsterdam
HARRY B. GREENMAN.....	Cortland
FRED HARMON.....	Adams, Mass.
FRANCIS A. KEENAN.....	Albany
JOHN J. KNAUF.....	Albany
JAMES R. LANGTON.....	Troy
GEORGE G. LENNY.....	Potsdam
JOHN A. LIVINGSTON.....	Hoosick Falls
ANDREW W. McLOUGHLIN.....	Albany
JOHN E. McNANY.....	Port Henry
JOHN J. MONAHAN.....	Auburn
JOHN K. OAKES.....	Cherry Valley
ELMER W. PEPPER.....	Schenectady
CLARENCE B. PUTNAM.....	Syracuse
JOHN D. SAUTER.....	Schenectady
CHARLES E. STICKLES.....	Philmont
RICHARD C. SULLIVAN.....	Troy
CHARLES S. TIFFT.....	Sand Lake
HARLEY E. WADE.....	Cook's Corners
JAMES WALLACE.....	Schenectady
HENRY C. WILSON.....	Rouse's Point
HARLEY L. WHIPPLE.....	Massena
ANDREW H. WITZE.....	Troy
ARTHUR B. YOUNG.....	Johnstown

Preliminary Examination

All applicants for admission to the regular course of lectures of this college will be required to pass a preliminary examination,

or present a grammar school certificate entitling the holder to enter a High School, or other satisfactory written evidence of attendance at an academy equal in grade to the High schools of this State. A knowledge of Arithmetic, Geography and Grammar, as far as is taught in the grammar schools of this State, and entitling the possessor to enter a High school of the State, will be required.

The Annual Lecture Term

The annual course of instruction in this college consists of six or more lectures each week during a period of five months, together with practical laboratory work, etc. The next course opens with an introductory lecture on Monday evening, October 7, 1901, and lectures will be delivered every week-day evening thereafter, except upon Saturdays, when the hour is at 2 o'clock P. M. No lectures or college exercises will be given upon Thanksgiving day, or the mid-winter holidays. The course is graded and extends over two years; students being divided into junior and senior classes, consisting of first and second year students respectively. The lectures to the senior class are given upon Monday, Wednesday and Friday evenings, and to the junior class upon Tuesday and Thursday evenings and Saturday afternoons, but students are allowed to attend all lectures without extra expense.

Order of Lectures and Laboratory Work

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
2 to 4 p. m. Microscopy	1 to 5 p. m. Junior Pharm. Laboratory	1 to 6 p. m. Senior Pharm. Laboratory	1 to 5 p. m. Junior Pharm. Laboratory	1 to 6 p. m. Senior Pharm. Laboratory	2 p. m. Junior Lecture Chemistry
—	—	—	—	—	—
4 to 5 p. m. Senior Pharmacog- nomy	5 to 6 p. m. Junior Chem. Lab.	7 to 8 p. m. Quiz Senior Pharmacy	5 to 6 p. m. Junior Chem. Lab.	7 to 8 p. m. Quiz Senior Chemistry	3 to 5 p. m. Junior Chem. Lab.
—	—	—	—	—	—
8 p. m. Sen. Lect. Mat. Med.	7 to 8 p. m. Quiz Junior Pharmacy	8 to 9:30 p. m. Sen. Lect. Pharmacy	7 to 8 p. m. Quiz Junior Chemistry	8 to 9:30 p. m. Senior Lect. Chemistry	—
—	—	—	—	—	—
	8 p. m. Jun. Lect. Pharmacy		8 p. m. Jun. Lect. Botany & Mat. Med.		

Requirements for Graduation

The diploma of this college confers the degree of GRADUATE IN PHARMACY, (Ph. G.) Applicants for this degree must be at least twenty-one years of age, of good moral character, have attended two full courses of lectures (which shall have included all laboratory practice) in this college, or the last course in this college and the first in some other college of pharmacy, or corresponding institution where the same branches are taught, provided there be no college of pharmacy in the same locality; have had, inclusive of the time of attendance at this college, four years' practical experience with some reputable and competent pharmacist; have passed a satisfactory examination, and paid all fees as hereafter stated.

Fees for Tuition

Matriculation (paid but once, but ticket required each year)	\$3 00
Lecture Tickets, full course (per session).....	30 00
Chemical Laboratory (one course required).....	15 00
Pharmaceutical Laboratory (each course).....	15 00
Course in Practical Microscopy(senior course).....	10 00
Graduation	10 00
Quiz class (each course).....	5 00

SUMMARY

Fees for Junior Course.....	\$68 00
Fees for Senior Course	70 00
Total for two years' course.....	\$138 00

Students who have attended two full courses of lectures at this college may attend further courses without extra charge, except quiz and laboratory fees, should these be taken. The matriculation ticket is to be taken out by the student at the beginning of his course; the other tickets are to be taken out and paid for during the first month.

For the catalogue of the Department, and further information, address

THE ALBANY COLLEGE OF PHARMACY,
Albany, N. Y.

DUDLEY OBSERVATORY

The Dudley Observatory at Albany was incorporated in 1852, and formally inaugurated in 1856. The funds for building were provided through a general subscription in Albany, New York, and other places. Mrs. Blandina Dudley was contributor of more than half the amount secured for all purposes, and of the amount contributed by her, about \$78,000, was, by the terms of her gifts, reserved for endowment.

In 1893, new buildings were erected on a site about two miles distant in a southwesterly direction from the former site. The buildings are now located on Lake avenue, in the southwestern part of Albany, and about 400 yards southwest of Washington Park. For the purpose of this removal and re-establishment more than \$70,000 has been contributed from various sources. Miss Catherine W. Bruce, of New York city, in March, 1892, offered \$25,000, chiefly for permanent endowment, on condition that the removal of the Observatory should be secured in the manner then contemplated. The conditions imposed by Miss Bruce were accepted and the Dudley Observatory is in possession of her gift. Subsequently, in October, 1893, Miss Bruce added \$10,000 to her original gift to the Observatory, making \$35,000 in all. The latter gift was designed to aid in the completion of the equipment of the Observatory, and the balance, \$5,000, if possible, to be carried to endowment. The city of Albany, through the Mayor and Park Commissioners, gave the new site upon property in possession of the Park Commission, and \$15,000 in exchange for the real estate formerly owned by the Dudley Observatory.

The sons of the late Thomas W. Olcott provided the means for refitting the Olcott Meridian Circle, for remounting it on the new site and for housing it in the most approved and perfect manner. Expenditures for this purpose already exceed \$6,000. The sons of the late Robert H. Pruyn gave \$6,000 for the construction of a new equatorial telescope, to be twelve inches in aperture, and adapted both to visual and photographic use. Both instruments are in position, and are ready for use.

Other constructions have been provided at a cost of approximately \$30,000.

Thus, the prospects and appliances of the Dudley Observatory have been completely transformed since March 1, 1892. It has now a modest equipment of very perfect instruments, and the annual means of its support have been substantially increased.

During the past four years Mr. A. J. Roy, A. M., C. E., and Mr. Wm. B. Varnum, A. B., have been employed as computers. The researches of the Observatory have been aided for several years by appropriations from the Bache Fund of the National Academy of Sciences.

The Dudley Observatory was founded for the purposes of astronomical investigation; and this character has been impressed upon it still more firmly by the terms of recent gifts. While no form of educational work is carried on at the Dudley Observatory, the director is always ready to aid assistants and other students of advanced standing in their astronomical studies. Graduate students have occasionally been received, and it is proposed to receive such students in the future; the requirement for admission being the ability to render computing services in lieu of fees.

For further information apply to

LEWIS BOSS, A. M., *Director*,

Albany, N. Y.

INDEX

	PAGE		PAGE
Union University		Honors, Special.....	94
Calendar.....	5	Latin.....	43
Constitution.....	7	Lectures, General.....	58
Faculty.....	9	Library.....	59
Officers.....	8	Mathematics.....	53
		Mechanics.....	54
Union College		Modern Languages.....	45
Absences.....	83	Museums.....	60
Admission.....	35	Officers.....	24
Biology.....	56	Order of Studies.....	63
Calendar.....	4	Philosophy.....	52
Chapel.....	84	Physics.....	54
Chemistry.....	55	Physiology.....	57
Commencement Awards in		Physical Education.....	57
1900.....	97	Political Economy....	49
Committees—of Faculty....	24	Prizes.....	90
—of Trustees....	21	Rhetoric.....	48
Conditions.....	84	Rooms.....	86
Courses of Study.....	33	Scholarships.....	87
Departments of Instruction..	43	Sociology.....	49
Degrees and Honors.....	93	Standing.....	83
Degrees conferred in 1900....	95	Students.....	25
English.....	46	Trustees.....	20
Expenses.....	86	Tuition.....	86
Entrance Examinations.....	42		
Faculty.....	22	School of Civil Engineering	
General Regulations.....	83	Admission.....	105
Geology.....	56	Courses of study.....	106
Greek.....	43	Degrees.....	103
History.....	49	Electrical.....	112
		Expenses.....	86

	PAGE		PAGE
Faculty	101	Expenses,.....	150
General.....	108	Faculty.....	146
Instruments and Apparatus... ..	113	Graduation	150
Order of Studies.....	118	Students,,.....	152
Sanitary	112	Trustees.....	145
Terms and Vacations.....	5		
Albany Medical College		Albany College of Pharmacy	
Calendar.....	137	Admission	163
Course of Instruction.....	137	Calendar.....	164
Examinations.	137	Course of Instruction.....	164
Faculty	129	Degree	165
Fees and Expenses.....	140	Faculty.....	161
Requirements for Graduation	141	Fees and Expenses.....	166
Students ,.....	133	Requirements for Graduation	165
Trustees.....	128	Students ,.....	162
		Trustees.....	160
Albany Law School		Dudley Observatory	
Admission	148	Admission.....	167
Calendar.....	148	Equipment and Work.....	168

ANNUAL CATALOGUE
OF
UNION UNIVERSITY



1901-1902

ONE HUNDRED AND SEVENTH YEAR

Fort Orange Press
BRANDOW PRINTING COMPANY
ALBANY, N. Y.

Form of Bequest to Union College

I give, devise and bequeath to the Trustees of Union College, in the town
of Schenectady, in the State of New York, the

ANNUAL CATALOGUE
OF
UNION UNIVERSITY



1901-1902

Fort Orange Press
BRANDOW PRINTING COMPANY
ALBANY, N. Y.

UNION UNIVERSITY

COLLEGE CALENDAR FOR 1902

	S	M	T	W	T	F	S		S	M	T	W	T	F	S
Jan.	.. 5 12 19 26	.. 6 13 20 27	.. 7 14 21 28	I 8 15 22 29	2 9 16 23 30	3 10 17 24 31	4 11 18 25 ..	July	.. 6 13 20 27	.. 7 14 21 28	I 8 15 22 29	2 9 16 23 30	3 10 17 24 31	4 11 18 25 ..	5 12 19 26 ..
Feb.	.. 2 9 16 23	.. 3 10 17 24	.. 4 11 18 25	.. 5 12 19 26	.. 6 13 20 27	.. 7 14 21 28	I 8 15 22 ..	Aug.	.. 3 10 17 24 31	.. 4 11 18 25 ..	.. 5 12 19 26 ..	.. 6 13 20 27 ..	.. 7 14 21 28 ..	I 8 15 22 29	2 9 16 23 30
Mar.	.. 2 9 16 23 30	.. 3 10 17 24 31	.. 4 11 18 25 ..	.. 5 12 19 26 ..	.. 6 13 20 27 ..	.. 7 14 21 28 ..	1 8 15 22 29 ..	Sept.	.. 7 14 21 28	I 8 15 22 29	2 9 16 23 30	3 10 17 24 ..	4 11 18 25 ..	5 12 19 26 ..	6 13 20 27 ..
Apl.	.. 6 13 20 27	.. 7 14 21 28	1 8 15 22 29	2 9 16 23 30	3 10 17 24 ..	4 11 18 25 ..	5 12 19 26 ..	Oct.	.. 5 12 19 26	.. 6 13 20 27	.. 7 14 21 28	1 8 15 22 29	2 9 16 23 30	3 10 17 24 31	4 11 18 25 ..
May	.. 4 11 18 25	.. 5 12 19 26	.. 6 13 20 27	.. 7 14 21 28	1 8 15 22 29	2 9 16 23 30	3 10 17 24 31	Nov.	.. 2 9 16 23 30	.. 3 10 17 24 ..	.. 4 11 18 25 ..	.. 5 12 19 26 ..	.. 6 13 20 27 ..	.. 7 14 21 28 ..	I 8 15 22 29 ..
Jun.	.. 1 8 15 22 29	.. 2 9 16 23 30	.. 3 10 17 24 ..	.. 4 11 18 25 ..	.. 5 12 19 26 ..	.. 6 13 20 27 ..	7 14 21 28 ..	Dec.	.. 7 14 21 28	1 8 15 22 ..	2 9 16 23 ..	3 10 17 24 ..	4 11 18 25 ..	5 12 19 26 ..	6 13 20 27 ..

Figures in heavy type indicate days on which Union College is in session.

UNIVERSITY CALENDAR

1902

- | | |
|-------------|---|
| 2 Jan. | Winter term of Union College begins. |
| 3 Jan. | Winter term of Medical College resumes. |
| 23 Jan. | Day of Prayer for Colleges. |
| 31 Jan. | First semester of Law School ends. |
| 4 Feb. | Second semester of Law School begins. |
| 21 Feb. | Allison-Foote Prize Debate between the Literary Societies. |
| 22 Feb. | Washington's Birthday. |
| 1 March | Examination for conditioned students. |
| 27 March | Winter term of Union College ends. |
| 1 April | Commencement of the College of Pharmacy. |
| 1 April | Spring term of Union College begins. |
| 15 April | Selection of Junior and Sophomore prize orators. |
| 3 May | Examination for conditioned students. |
| 6 May | Commencement of the Medical College. |
| 15 May | Date for presentation of prize essays. |
| 29 May | Commencement of Law School. |
| 30 May | Memorial Day. |
| 8 June | Sunday. Baccalaureate Sermon, Union College. |
| 9 June | Prize Contest in Extemporaneous Speaking, and Prize Oratory of Juniors and Sophomores. |
| 10 June | Meeting of Trustees, Phi Beta Kappa, Sigma Xi, Alumni. |
| 11 June | Commencement of Union College, the second Wednesday in June. President's reception. |
| 12, 13 June | Entrance examinations, Union College. |
| 16 Sept. | Registration Day for Freshmen, Union College. |
| 17 Sept. | Registration Day for Students other than Freshmen, Union College. Entrance Examinations, Union College. |

University Calendar—Continued

1902

- 18 Sept. First Chapel Exercises and Recitations, Entrance Examinations concluded.
19 Sept. Freshman Recitations begin.
20 Sept. Examination for conditioned students.
23 Sept. Registration day, Law School.
24 Sept. Law School begins.
30 Sept. Winter term of Medical College begins.
6 Oct. The College of Pharmacy begins.
4 Nov. Election Day.
27 Nov. Thanksgiving Day. Recess four days.
6 Dec. Examination for conditioned students.
19 Dec. Fall term of Union College ends.

1903

- 5 Jan. Winter term of Union College begins.
5 Jan. Winter term of Medical College resumes.
22 Jan. Day of Prayer for Colleges.
20 Feb. Allison-Foote Prize Debate between the Literary Societies.
22 Feb. Washington's Birthday.
7 March Examination for conditioned students.
27 March Winter term of Union College ends.
30 March Spring term of Union College begins.
31 March Commencement of the College of Pharmacy.
7 June Sunday. Baccalaureate Sermon, Union College.
8 June Prize Contest in Extemporaneous Speaking, and Prize Oratory of Juniors and Sophomores.
9 June Meeting of Trustees, Phi Beta Kappa, Sigma Xi, Alumni.
10 June Commencement of Union College, the second Wednesday in June. President's reception.
11, 12 June Entrance Examinations, Union College.

UNION UNIVERSITY

Union University embraces the following institutions :

UNION COLLEGE.

ALBANY MEDICAL COLLEGE.

ALBANY LAW SCHOOL.

DUDLEY OBSERVATORY.

ALBANY COLLEGE OF PHARMACY.

Union College acquired by its charter granted in 1795, full University powers, but the creation of graduate institutions at Schenectady was not found practicable. Schools of Law and Medicine and also an Astronomical Observatory have long existed at Albany, only a few miles distant. The arrangement naturally suggested by these circumstances was, that the Professional Schools and the Observatory at Albany should be united with Union College, under the Charter and Board of Trustees of the latter. This was accordingly effected by the incorporation of Union University in 1873. The Albany College of Pharmacy was created by the Board of Governors, June 21, 1881, and incorporated as a Department of the University, August 21, of the same year.

The President of Union College and permanent Chancellor of Union University has the oversight of the University, each of the institutions having its resident Dean. The Dean of Union College acts in the place of the President in his absence, and also assists him in matters delegated to him by the President. The University Board of Governors is composed of permanent trustees of Union College, and of representatives of each of the other institutions embraced in Union University.

OFFICERS OF THE UNIVERSITY**Chancellor**

ANDREW V. V. RAYMOND, D. D., LL. D.

Honorary Chancellor, 1901

HON. ALTON B. PARKER, LL. D.

Board of Governors**President**

SIMON W. ROSENDALE, Albany, N. Y.

Secretary

AMASA J. PARKER, Albany, N. Y.

Union College

ANDREW V. V. RAYMOND, D. D., LL. D. Schenectady, N. Y.
 SILAS B. BROWNELL, LL. D. New York City.
 WILLIAM IRVIN, D. D. New York City.
 JUDSON S. LANDON, LL. D. Schenectady, N. Y.
 EDWARD WINSLOW PAIGE, LL. D. New York City.
 WILLIAM H. H. MOORE, LL. D. New York City.
 DENIS WORTMAN, D. D. Saugerties, N. Y.
 JOHN H. STARIN New York City.
 JOHN A. DEREMER, A. M. Schenectady, N. Y.
 CLARK BROOKS, A. M. New York City.
 GEORGE ALEXANDER, D. D. New York City.

Albany Medical College

WILLIAM L. LEARNED, LL. D. Albany, N. Y.
 SIMON W. ROSENDALE Albany, N. Y.

Albany Law School

AMASA J. PARKER, A. M. Albany, N. Y.
J. NEWTON FIERO, LL. D. Albany, N. Y.

Dudley Observatory

JOHN F. RATHBONE. Albany, N. Y.
SAMUEL B. WARD, M. D., PH. D. Albany, N. Y.

Albany College of Pharmacy

WILLIAM J. WALKER. Albany, N. Y.
WILLIS G. TUCKER, M. D., PH. D., F. C. S. Albany, N. Y.

UNIVERSITY FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature, and Lecturer on
Current History.

ALBERT VANDER VEER, M. D., PH. D.,
Dean of the Medical Faculty and Professor of Didactic, Abdomi-
nal and Clinical Surgery.

JOHN M. BIGELOW, M. D., PH. D.,
Emeritus Professor of Materia Medica, Therapeutics and
Diseases of the Throat and Nose.

HON. JUDSON S. LANDON, LL. D.,
Lecturer on Constitutional Law.

WILLIS G. TUCKER, M. D., PH. D., F. C. S.,
Registrar of the Medical College and Professor of Chemistry
and Toxicology.

WILLIAM HAILES, M. D.,
Anthony Professor of Pathological Anatomy, Embryology, His-
tology and Fractures and Dislocations.

SAMUEL B. WARD, M. D., PH. D.,
Professor of Theory and Practice of Medicine, and of Hygiene.

JAMES P. BOYD, M. D.,
Professor of Obstetrics, Gynecology and Diseases of Children.

CYRUS S. MERRILL, M. D.,
Professor of Ophthalmology and Otology.

SIDNEY G. ASHMORE, A. M., L. H. D.,
Professor of the Latin Language and Literature.

FREDERIC C. CURTIS, M. D.,
Professor of Dermatology.

LEWIS BOSS, A. M.,
Director of Dudley Observatory.

ALFRED B. HUESTED, M. D., PH. G.,
Professor of Botany and Materia Medica.

GUSTAVUS MICHAELIS, PH. G.,
Professor of Pharmacy.

HENRY HUN, M. D.,
Professor of Diseases of the Nervous System.

SAMUEL R. MORROW, M. D.,
Professor of Anatomy and of Orthopedic and Operative
Surgery.

JAMES R. TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS W. WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK S. HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

BENJAMIN H. RIPTON, PH. D., LL. D.,
Dean of Union College and Professor of History and Sociology.

Union University

J. NEWTON FIERO, LL. D.,

Dean of the Law School and Professor of Procedure, Equity,
Torts.

HON. SIMON W. ROSENDALE,

Lecturer on the Civil Law.

HON. ALTON B. PARKER,

Lecturer on Development of the Law.

OLIN H. LANDRETH, A. M., C. E.,

Professor of Civil Engineering.

HERMAN CAMP GORDINIER, M. D.,

Professor of Physiology.

JAMES F. TRACEY,

Professor of the Law of Corporations.

WENDELL LAMOROUX, A. M.,

Librarian of Union College.*

JAMES H. STOLLER, A. M., PH. D.,

Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,

Professor of Rhetoric and Logic.

HON. ALBERT C. TENNANT,

Professor of Criminal Law and the Laws of Real and Personal Property.

LEWIS R. PARKER,

Professor of the Law of Bailments.

**hmeritus*.

HON. D. CADY HERRICK,
Lecturer on Municipal Corporations.

HON. IRVING G. VANN, LL. D.,
Lecturer on the Law of Insurance.

HON. ALDEN CHESTER,
Lecturer on the Federal Judicial System.

HOWARD VAN RENSSELAER, M. D.,
Professor of Materia Medica and Therapeutics, and Adjunct
Professor of Theory and Practice of Medicine.

JOHN I. BENNETT, A. B.,
Acting Professor of the Greek Language and Literature.

SAMUEL B. HOWE, A. M., PH. D.,
Adjunct Nott Professor (No. 4), Principal of Union School,
Schenectady.

JOSEPH D. CRAIG, M. D.,
Adjunct Professor of Anatomy, Demonstrator of Anatomy
and Curator of the Medical Museum.

WILLIS GOSS MACDONALD, M. D.,
Adjunct Professor of Surgery.

GEORGE BLUMER, M. D.,
Adjunct Professor of Histology, Pathology and Bacteriology.
Director of Bender Hygienic Laboratory.

ANDREW MACFARLANE, M. D.,
Adjunct Professor of Medical Jurisprudence and Physical
Diagnosis, and Law School Lecturer on
Medical Jurisprudence.

HERMAN BENDELL, M. D.,
Clinical Professor of Otology.

Union University

THEODORE F. C. VAN ALLEN, M. D.,
Clinical Professor of Ophthalmology.

CLINTON BRADFORD HERRICK, M. D.,
Clinical Professor of Railway Surgery.

DE BAUN VAN AKEN, PH. G.,
Lecturer on Pharmacy.

HON. WALTER E. WARD,
Lecturer on the Law of Patents, Copyrights and Trade Marks.

HOWARD OPDYKE, A. B.,*
Assistant Professor of Physics.

ARTHUR JAY ROY, C. E., A. M.,
Assistant in Dudley Observatory.

FLETCHER W. BATTERSHALL,
Professor of Elementary Law, and Domestic Relations.

ALVAH S. NEWCOMB,
Professor of the Statutes of New York.

B. LEARNED HAND
Professor of Quasi Contracts and Civil Law.

LEO HAENDELL NEUMAN, M. D.,
Clinical Professor of the Theory and Practice of Medicine
and Gastro-Enteric Diseases.

JESSE M. MOSHER, M. D.,
Clinical Professor of Insanity, Neurology and Electro-
Therapeutics.

ARTHUR GUERNSEY ROOT, M. D.,
Clinical Professor of Diseases of the Throat and Nose.

*Absent on leave.

ARTHUR W. ELTING, M. D.,
Lecturer on Surgical Pathology.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

WILLIAM OLIN STILLMAN, M. D.,
Lecturer on History of Medicine.

HORACE T. EDDY, B. E. E., E. E.
Assistant Professor of Electrical Engineering.

FRANK BLAIR WILLIAMS, C. E., M. S., PH. D.,
Assistant Professor of Engineering.

RICHARD S. CURTISS, Ph. D.,
Assistant Professor of Chemistry.

FREDERICK H. WILKENS, Ph. D.
Assistant Professor of Modern Languages.

GEORGE EMORY LOCHNER, M. D.,
Lecturer on Gynecology.

THEODORE JAMES BRADLEY, PH. G.,
Lecturer on Inorganic Chemistry and Instructor in
Chemistry.

ARTHUR TURNER LAIRD, M. D.,
Lecturer on Clinical Microscopy.

FRANK RICHARDSON, PH. G.,
Instructor in Materia Medica and Director of the Pharma-
ceutical Laboratory.

CHARLES HENRY MOORE, M. D.,
Instructor in Ophthalmology and Otology.

THOMAS WILLIAMS JENKINS, M. D.,
Instructor in Histology and Pathological Anatomy, and
Microscopy.

THOMAS ADDIS RYAN, M. D.,
Instructor in Surgery.

WILFRED SYLVESTER HALE, M. D.,
Instructor in Anatomy and Assistant Demonstrator in
Anatomy.

WILLIAM B. VARNUM, A. B.,
Assistant in Dudley Observatory.

CLEMENT F. THEISEN, M. D.,
Instructor in Diseases of the Throat and Nose.

JAMES M. MOORE, M. D.,
Instructor in Orthopedics.

CHARLES HARPER RICHARDSON, M. D.,
Lecturer on Minor Surgery.

HARRY JUDSON LIPES, M. D.,
Lecturer on Obstetrics.

JOHN LEWIS MARCH, A. M.,
Instructor in Modern Languages.

SPENCER LYMAN DAWES, M. D.,
Instructor in Theory and Practice of Medicine, and Thera-
peutics.

ARTHUR SAUTTER, M. D.,

Instructor in Dermatology.

STEPHEN B. GRISWOLD,

Law School Lecturer on Books and Their Uses.

HERBERT L. TOWNE, A. B., M. D.,

Instructor in Physical Culture.

JAMES WESLEY WILTSE, M. D.,

Instructor in Materia Medica and Therapeutics.

HENRY LARNED KEITH SHAW, M. D.,

Instructor in Diseases of Children.

ALVAH HARRY TRAVER, M. D.,

Instructor in Surgery.

EDGAR ROSCOE STILLMAN, M. D.,

Instructor in Physiology.

EDGAR ALBERT VANDER VEER, M. D.,

Instructor in Surgery.

FREDERICK EDWARDS, C. E.,

Instructor in Surveying, Drafting and Mathematics.

EDWIN B. WHEELER, B. S.,

Instructor in Physics.

GEORGE LINIUS STREETER, M. D.,

Instructor in Clinical Medicine and Physiology.

JAMES FRANCIS ROONEY, M. D.,

Instructor in Anatomy and Assistant Demonstrator of
Anatomy.

EUGENE EUNSON HINMAN, M. D.,
Instructor in Anatomy and Assistant Demonstrator of
Anatomy.

EDWARD WATERBURY BECKER, M. D.,
Instructor in Physiology.

GARRET VANDER VEER DILLENBACK, Ph. G.,
Instructor in Pharmacy.

UNION COLLEGE

ACADEMIC DEPARTMENT OF

UNION UNIVERSITY

SCHENECTADY, N. Y.

UNION COLLEGE

Union College was incorporated by the Regents of the University of the State of New York, on the 25th day of February, 1795. It was the second college incorporated in the State, and the first north of the city of New York and west of the Hudson River. It received its name from the circumstance that several religious denominations co-operated in its organization, and was the first college in the United States which was not of a strictly denominational character. It has continued from its foundation to be the representative institution of Christian unity.

The first president of Union College was the Rev. John Blair Smith, of Philadelphia. He was elected in 1795, and resigned in 1799, only a few months before his death. He was succeeded by Jonathan Edwards, the younger, who died in 1801. The Rev. Jonathan Maxcy, previously president of Brown University, succeeded Dr. Edwards, and resigned at the end of two years. In 1804, the Rev. Eliphalet Nott was elected president of Union College, which office he held until his death, on the 29th day of January, 1866. The Rev. Laurens P. Hickok, a graduate of the College, who had long acted as vice-president, was elected his successor. He resigned in 1868. The Rev. Charles A. Aiken succeeded Dr. Hickok in 1869, and resigned in 1871. The Rev. Eliphalet Nott Potter was elected president in 1871, and inaugurated June 20, 1872. On his resignation, in 1884, the Hon. Judson S. Landon, LL. D., was appointed president *ad interim*, and served until the inauguration of Harrison E. Webster, LL. D., who was elected president May 23, 1888, and inaugurated June 26, 1888. On his resignation in January, 1894, Rev. Andrew V. V. Raymond, D. D., LL. D., was elected president and inaugurated in June, 1894.

OFFICERS OF UNION COLLEGE

Trustees

- Ex-Officio. { HIS EXCELLENCY BENJAMIN B. ODELL, JR., Governor.
 HON. TIMOTHY L. WOODRUFF, Lieut.-Governor.
 HON. JOHN T. McDONOUGH, Secretary of State.
 HON. NATHAN L. MILLER, Comptroller.
 HON. JOHN P. JAECKEL, Treasurer.
 HON. JOHN C. DAVIES, Attorney-General.
- SILAS B. BROWNELL, LL. D., 71 Wall street, New York.
 REV. WILLIAM IRVIN, D. D., Oyster Bay, N. Y.
 HON. JUDSON S. LANDON, LL. D., Schenectady.
 HON. EDWARD W. PAIGE, LL. D., 46 Cedar street, New York.
 WM. H. H. MOORE, A. M., LL. D., 51 Wall street, New York.
 REV. DENIS WORTMAN, D. D., Saugerties.
 HON. JOHN H. STARIN, Pier 18, N. R., New York.
 HON. JOHN A. DE REMER, A. M., Schenectady.
 CLARK BROOKS, A. M., 54 William street, New York.
 REV. GEORGE ALEXANDER, D. D., 10th street and University place, New York.
 HON. WARNER MILLER, LL. D., Herkimer.
 NICHOLAS V. V. FRANCHOT, A. M., Olean.
 WILLIAM B. RANKINE, A. M., Niagara Falls.
 HON. DANIEL S. LAMONT, 35 Wall street, New York.
 REV. PHILIP H. COLE, A. M., Syracuse, term of office expiring June, 1902.
 EDWARD P. WHITE, A. M., Amsterdam, term of office expiring June, 1904.
 FREDERICK W. CAMERON, Albany, term of office expiring June, 1905.

Finance Committee

HON. JUDSON S. LANDON, LL. D.

HON. JOHN H. STARIN

HON. JOHN A. DEREMER, A. M.

CLARK BROOKS, A. M.

W. H. H. MOORE, A. M., LL. D.

HON. NICHOLAS V. V. FRANCHOT, A. M.

WILLIAM B. RANKINE, A. M.

Instruction Committee

REV. GEORGE ALEXANDER, D. D.

REV. PHILIP H. COLE, A. M.

REV. WILLIAM IRVIN, M. D.

Treasurer

FRANK BAILEY, ESQ.

Secretary

CLARK BROOKS, A. M.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature, and Lecturer on
Current History.

SIDNEY G. ASHMORE, A. M., L. H. D.,
Professor of the Latin Language and Literature.

JAMES R. TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS W. WRIGHT, A. M., PH. D.,
Professor of Mathematics.

FRANK S. HOFFMAN, A. M., PH. D.,
Professor of Mental and Moral Philosophy.

BENJAMIN H. RIPTON, PH. D., LL. D., DEAN,
Professor of History and Sociology.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

WENDELL LAMOROUX, A. M.,
Librarian.*

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

*Emeritus.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

JOHN I. BENNETT, A. B.,
Acting Professor of Greek.

HOWARD OPDYKE, A. B.,*
Assistant Professor of Physics.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

HORACE T. EDDY, B. E. E., E. E.,
Assistant Professor of Electrical Engineering.

FRANK BLAIR WILLIAMS, C. E., M. S., PH. D.,
Assistant Professor of Engineering.

RICHARD S. CURTISS, PH. D.,
Assistant Professor of Chemistry.

FREDERICK H. WILKENS, PH. D.,
Assistant Professor of Modern Languages.

SAMUEL B. HOWE, A. M., PH. D.,
Adjunct Nott Professor (No. 4), Principal of Union School.

JOHN LEWIS MARCH, A. M.,
Instructor in Modern Languages.

HERBERT L. TOWNE, A. B., M. D.,
Instructor in Physical Culture.

FREDERICK EDWARDS, C. E.,
Instructor in Surveying, Drafting, and Mathematics.

EDWIN B. WHEELER, B. S.,
Instructor in Physics.

*Absent on leave.

IN MEMORIAM



MAURICE PERKINS, A. M., M. D.,

Professor of Chemistry, 1865-1901.

Died June 18, 1901.

GENERAL DANIEL BUTTERFIELD,

Trustee of Union College, 1899-1901.

Died July 18, 1901.

GILBERT K. HARROUN,

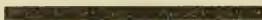
Treasurer of Union College, 1892-1901.

Died September 12, 1901.

HENRY WHITEHORNE, A. M., LL. D.,

Professor of the Greek Language and Literature, 1869-1901.

Died September 29, 1901.



COLLEGE OFFICERS

FRANK BAILEY,

Treasurer.

WENDELL LAMOROUX, A. M.,

Librarian Emeritus.

JAMES H. STOLLER, PH. D.,

Curator of the Museum.

MRS. M. L. PEISSNER,

Registrar.

HERBERT L. TOWNE, M. D.,

Director of Gymnasium.

CHARLES B. POND,

Assistant Treasurer.

R. T. McCORD,

Accountant and President's Secretary.

GEORGE CLUTE,

Superintendent of Grounds and Buildings.

Standing Committees of the Faculty

EDUCATION.—Professors Ripton, Wells, Ashmore, Truax, Wright, Hoffman, Landreth, Hale, Stoller, Bennett, Curtiss and Mr. Wheeler and Dr. Towne.

LIBRARY.—Professors Wright, Hale and Jones.

CATALOGUE.—Professors Ripton, Bennett and Jones.

SCHOLARSHIPS.—Professors Ripton, Bennett and Williams.

STAGE APPOINTMENTS.—Professors Wright, Stoller and Edwards.

ATHLETICS.—Professors Williams and Stoller and Dr. Towne.

RULES.—Professors Ashmore, Wright and Hoffman.

SENIOR CLASS.—Professors Hale, Bennett and Eddy.

JUNIOR CLASS.—Professors Truax and Jones and Mr. March.

SOPHOMORE CLASS.—Professors Stoller, Ashmore and Curtiss.

FRESHMAN CLASS.—Professors Hoffman, Bennett and Wilkens.

PREPARATORY SCHOOLS.—Professors Bennett, Jones, Eddy and Williams, and Messrs. March, Wheeler and Edwards.

ADMISSIONS.—Professors Truax, Ashmore, Wright, Landreth, Bennett, Jones, Wilkens and Dr. Towne.

DISCIPLINE.—Professors Ripton, Landreth, Hale and Bennett, and Mr. March.

MUSIC.—Professor Bennett, Mr. March, and Professor Wilkens.

STUDENTS

Abbreviations

c, A. B. course; *s*, B. S. course; *g e*, B. E. course in General Engineering; *s e*, B. E. course in Sanitary Engineering; *e e*, B. E. course in Electrical Engineering; *ls*, Ph. B. course; N. C., North College; S. C., South College.

Seniors, Class of 1902

c WILLIAM HOOPER ADAMS...*Charleston, S. C.*, 74 N. C.
ge ARCHIBALD LAMON ANDERSON, *Ballston Spa*...95 N. C.
c EVERETT J. BEST.....*Elk Creek*...13 Landon Terrace
ls LESTER W. BLOCH.....*Albany*....B © II House
s HERBERT C. BOTHWELL.....*Albany*..... Ψ Υ House
s ROBT. A. BOWEN, *Mont Pleasant, Schenectady*, 61 N. C.
ge H. BURDETT CLEVELAND.....*Amsterdam*.....96 N. C.
s DANIEL VEDDER CLUTE.....*Schenectady*, 4 Nott Terrace
ge THEODORE DEL. COFFIN.....*Glens Falls*... K A Lodge
c WALTER ALLEN COWELL....*Albany*..Albany Med. Col.
c HARRY LAURENS CRAIN.....*Marathon*...Silliman Hall
c RAYMOND R. CRIM.....*Middleville*....X Ψ Lodge
ls JAMES E. FINEGAN.....*Beekmantown*....85 N. C.
ls HERBERT L. FULLER.....*Waterport*... Φ Γ Δ House
c WILLIAM HUGH GILLESPIE..*New Brighton, S. I.*,
X Ψ Lodge

- c* DICKINSON EARNEST GRIFFITH, *Watertown*, ΦΔΘ House
c EVERETT T. GROUT.....*Cooperstown*, 514 Union St.
ls JOHN DENNETTE GUTHRIE...*Smithville, Va...* 77 N. C.
c NEILSON C. HANNAY....*Rynex Corners*, 110 Johnson St.
c DONALD CARLTON HAWKES..*Elmira* ΨΥ House
c WALTER ENNIS HAYS.....*Albany*, Albany Med. Coll.
ls ADDISON HOTALING HINMAN, *Albany*.... A Δ Φ House
ge ROBERT BRUCE HOADLEY.....*Binghamton*, A Δ Φ House
ee HARRY C. HOYT.....*Kalamazoo, Mich.*,
A Δ Φ House
ls EVERETT TURNER MALLERY...*Middleburgh*.... 85 N. C.
c FRASER METZGER.....*Freehold*..... 70 N. C.
c FRANK WATKIN NEARY.....*Cohoes* Φ Γ Δ House
ge GEORGE ISRAEL OAKLEY.....*East Williston*.... 96 N. C.
c FRANK TAYLOR OSTRANDER..*Albany* X Ψ Lodge
s HOWARD MARSHFIELD PARSONS, *Batavia*..... 93 N. C.
s ARTHUR SHELDON RAYMOND..*Lincoln, Neb.*, A Δ Φ House
c JOSEPH MILTON RUSSUM....*Schenectady*. A Δ Φ House
ls HOWARD EMMETT SANDS....*Jordan* Φ Γ Δ House
ge DAVID JOSEPH SHAW.....*Auburn*.... .. 95 N. C.
ge JAMES H. SMALL, JR.....*Charleston, S. C.*, K A Lodge
c ARTHUR LONSON SOUTH..*Birchton*, 314 Germania Ave.
ls FRANK LAURENCE STILES....*Lansingburg*.. ΨΥ House
ge FENWICK M. THEBO.....*Fort Edward*.. Δ Φ House
ee HARRY REEVES WILSON.....*Albany*.... K A Lodge
c GILBERT SYLVESTER WOOLWORTH, *Watertown*, ΦΔΘ House
ls ROBERT CHAUNCEY YATES...*Schenectady*, 514 State St.
s WILLARD STUART YATES....*Lincoln, Neb.*, A Δ Φ House
 Seniors, 42.

Juniors, Class of 1903

<i>gr s</i>	FREDERICK JANSON BALZ....	<i>Amsterdam</i>	63	N. C.
<i>c</i>	ROBERT FINNEY BARRETT....	<i>Canajoharie</i>	Φ Δ Θ	House
<i>s</i>	ARTHUR ERNEST BISHOP....	<i>Oneonta</i> ...	Φ Δ Θ	House
<i>c</i>	JOHN ALBERT BOLLES.....	<i>Kortright</i>	54	N. C.
<i>s</i>	JOSEPH R. BROWN, JR.....	<i>Seward</i>	Φ Γ Δ	House
<i>ls</i>	MOREY CHARLES COLLIER....	<i>Savona</i> ...	Φ Γ Δ	House
<i>c</i>	FRANK H. DALEY.....	<i>Coxsackie</i> , 110	Johnson St.	
<i>c</i>	THOMAS G. DELBRIDGE.....	<i>Batavia</i>	K A	Lodge
<i>e</i>	WILLIAM JAY DICKENSON...	<i>Flycreek</i>	58	N. C.
<i>c</i>	GEORGE WILLIAM DONNAN...	<i>Troy</i>	K A	Lodge
<i>c</i>	RAYMOND CURTIS DONNAN...	<i>Troy</i>	K A	Lodge
<i>ls</i>	JOSEPH GEORGE FENSTER....	<i>Troy</i>	89	N. C.
<i>ls</i>	NORMAN NORTON GOULD....	<i>Penn Yan</i> ..	So. Colonnade	
<i>s</i>	GUY BROWN GRISWOLD.....	<i>Whitehall</i> ...	Φ Γ Δ	House
<i>ls</i>	JAMES Q. GULNAC..	<i>Binghamton</i> , A Δ	Φ	House
<i>s</i>	CLINTON BENJAMIN HAWN..	<i>Albany</i>	Φ Δ Θ	House
<i>c</i>	SAMUEL B. HOWE, JR.....	<i>Schenectady</i> , A Δ	Φ	House
<i>ls</i>	HERBERT G. HOXIE.....	<i>Cambridge</i> ...	X Ψ	Lodge
<i>c</i>	EUSTACE HULSAPPLE.....	<i>Watervliet</i> ...	Ψ Y	House
<i>gr s</i>	LOUIS TIFFANY HUNT.....	<i>Ephratah</i>	73	N. C.
<i>s</i>	ALBERT HENRY KESSLER....	<i>Schenectady</i>	54	N. C.
<i>e</i>	CARL RODERIC KRUEGER...	<i>Schenectady</i> , 211	Liberty St.	
<i>s</i>	WALTER EDISON KRUESI....	<i>Schenectady</i> , 16	Union St.	
<i>e</i>	OTIS F. LEWIS.....	<i>Gilboa</i> ..	North Colonnade	
<i>e</i>	JAMES FRANKLIN MORGAN...	<i>Fort Edward</i>	58	N. C.
<i>e</i>	FRANCIS JAMES MULVANEY..	<i>Worcester</i>	Δ Φ	House
<i>e</i>	GLOWACKI PARKER.....	<i>Batavia</i>	78	N. C.

- c* SAMUEL DIMOCK PALMER... *Ogdensburg*, A Δ Φ House
c JOHN FAY PUTNAM..... *Johnstown*..... 85 N. C.
s ELBERT THEODORE RULISON, Jr., *Schenectady*,
 1208 State St.
s ARCHIBALD HAMILTON RUTLEDGE, *Santee*, S. C.,
 K A Lodge
e HENRY COOK SALMOND, JR... *Camden*, S. C.... 77 N. C.
ls GEORGE EARL SMITH..... *Schenectady*,
 349 Romeyn St.
ls CHARLES GOWDY STILES.... *Lansingburgh*, Ψ Y House
ls WILLIAM CARL TREDER..... *Albany*..... BΘ II House
e WINSLOW BARNES WATSON.. *Plattsburgh*..... 78 N. C.
e HARRY ROGERS WICKHAM... *South Bethlehem*, 91 N. C.
 Sophomores, 47.

Freshmen, Class of 1905

- c* GEORGE BUNYAN ALEXANDER, *West Charlton*, A Δ Φ House
e CLARENCE STILMAN ARMS... *Sidney*..... 118 Jay St.
e ELVIN JAY BECKER..... *Middleburgh*.. 24 Park Pl.
e FREDERICK BLAKE..... *Brooklyn*.. A Δ Φ House
e CARL JOHN BROMLEY..... *Penn Yan*.... 24 Park Pl.
s WILLIAM LEROY BROOKS.... *Albany*..... A Δ Φ House
e HENRY GORDON BURNHAM... *Glens Falls*.. K A Lodge
e LEROY PIERCE COLLINS... *Troy*..... 959 State St.
e JAMES HANNAH CUNNINGHAM, *Schenectady*,
 1101 State St.
s SAMUEL RANDALL DAVENPORT, *Albany*... Ψ Y House
e EDGAR WHRITENOUR EARLE, *Lancaster*, 54 N. College St.
ls ERNEST JUDSON ELLENWOOD, *Dannemora*,
 921 Delemont Ave.

- ls* GEORGE MYRES ELMENDORF, ... *Alcove* . . . B © II House
e FRANK THORBURN FORSTER, ... *Nyack* . . . 110 Lafayette St.
ls NELSON KAUFMAN FROMM, ... *Albany* . . . 34 Park Ave.
e JAMES MICHAEL GAGEN, ... *Amsterdam* . . . Amsterdam
s LUTHER SEWARD HAGADORN, ... *Stamford* . . . No. Colonnade
e ARTHUR MERRILL HAGAR, ... *Plattsburgh*, B © II House
ls LOUIS CHRISLER HART, ... *Albany* . . . 15 University Pl.
s WILLIAM GOODING HARTIN, ... *Mayfield* . . . Rexford Flats
e NEIL CUMMINGS HOLDREDGE, *West Burlington*,
B © II House
s THOMAS MILTON HOLMES, ... *Albany* . . . 57 N. C.
ls GEORGE ANTHONY HOPKINS, ... *Amsterdam* . . . Amsterdam
e WILLIAM THEODORE HUNT, ... *Otego* . . . 706 E. Liberty St.
c CLAUDE KINNE HUSTON, ... *Selma, Ala.*, 17 Mynderse St.
e WILLIAM JAMES JONES, ... *Hagaman* . . . 514 Union St.
e ERIC TURE KING, ... *Rosebank*, A Δ Φ House
e MORLAND KING, ... *Brooklyn* . . . A Δ Φ House
e HERMAN CARL KLUGE, ... *Elmira* . . . 94 No. College
ls FRANK IRA LOSEE, ... *Fergusonville*, 204 Nott St.
e DANIEL PROVOOST MANNING, ... *Albany* . . . X Ψ Lodge
e CHARLES DUPLESSIS MATTHEWS, *Albany* . . . Albany
s CHARLES MALCOLM MCGREGOR, *Gloversville*,
706 East Liberty St.
c THOMAS EARL MCGUIRK, ... *Albany* . . . 34 Park Ave.
e JOHN LESLIE MOON, ... *Cooperstown* . . . Φ Δ © House
e WILLIAM ORSON MORSE, ... *Camden* . . . 94 No. College
e JOSEPH EDWARD MYERS, ... *Schenectady* . . . Y. M. C. A.
e JOHN ROWLAND NOWELL, ... *Anderson, S. C.* . . . 74 N. C.

- e* WALTER ERNEST NUTT.....*Hoosick*....102 State St.
e LEROY LEE ODELL.....*Poughkeepsie*, 722 Union St.
c FREDERIC CURTIS PATTON....*Rensselaer*... A Δ Φ House
s CHARLES EMMET QUINN.....*Cohoes*.....79 N. C.
e JOHN HENRY RAY.....*Rheims*.....76 N. C.
c MORRIS THOMAS RAYMOND..*Schenectady*, College Hill
e HERBERT EUGENE REEVES....*Glens Falls*, 629 Liberty St.
e EDMUND GAILLARD SIMONS...*Eutawville*, S. C., 71 N. C.
e ROLLAND BARKER SMITH.....*Peru*.....57 N. C.
ls JAMES ROSE STEVENS, JR.....*Cohoes*.....[Φ Γ Δ House
ls ALEXANDER J. THOMPSON, JR., *Schenectady*,
20 No. Church St.
e EUGENE GREGORY TOY.....*Schenectady*, B Θ Π House
s GEORGE ARTHUR VEDDER.....*Schenectady*, 947 State St.
ls CHARLES GUY VERNOOY.....*Ellenville*,
309 Germania Ave.
e MASON WILLIAM WADSWORTH, *Binghamton*, A Δ Φ House
ls WILLIAM THEODORE WALKER, *Schuyler, Neb.*, Ψ Υ House
e KARL FREDERICK WEST.....*Caldwell*.... K A Lodge
e FRANK SPERRING WHEELER...*Sidney*....34 Park Ave.
ls EDWARD GOVE WHIPPLE.....*Malone*.....B Θ Π House
e GUY FOSTER WHIPPLE.....*Malone*, 309 Germania Ave.

Freshmen, 58.

Irregular Students

- ('03 *e*) CURTIS DANIEL BUNTING, *Hamburg*.... Ψ Υ House
('02 *e*) JOHN PATRICK CARVER, *Westport*..... Δ Φ House

- (’03 e) LAWRENCE J. GALLAGHER, *Troy*. Troy
(’04 e) HOWARD RAYMOND GLUTZBECK, *Bay Shore, L. I.*,
68 N. C.
(’04 e) ROBERT HOYT JOHNSTON, *Port Leyden*, Φ Γ Δ House
(’04 ls) LUKE FRANCIS LOVELOCK, *Troy*. 89 N. C.
(’04 e) BENJAMIN JULIUS LOWENSTEIN, *Amsterdam*,
93 N. C.
(’04 e) GEORGE VAUGHN SHERRILL, *Sandy Hill*, Ψ Υ House

Summary of Students

Seniors	42
Juniors	40
Sophomores	47
Freshmen	58
Irregular Students.....	8
<hr/>	
Total.....	195

COURSES OF STUDY

1.—Course leading to the degree of A. B.

This is the usual classical course. Latin and Greek are required for two years and are elective for the remainder of the course. French and German are included in addition to the ancient languages.

2.—Course leading to the degree of Ph. B.

This course offers Latin without Greek for which is substituted additional work in modern languages and science.

3.—Course leading to the degree of B. S.

This course is based upon the study of mathematics and the sciences, with extended work in English and other modern languages.

In courses 1, 2, and 3 the greater part of the work of the last two years is elective.

4.—General course leading to the degree of B. E.

This course is intended to give the basis of an Engineering education, including the fundamental principles of all special branches of the profession, a knowledge of both French and German, and a course in English.

5.—Sanitary course leading to the degree of B. E.

This differs from course 4 in substituting special work in Sanitary Engineering for some of the General Engineering studies.

6.—Electrical course leading to the degree of B. E.

This differs from course 4 in substituting special work in Electricity and its applications, in place of some of the General Engineering studies.

Students having the profession of Medicine in view are permitted to take the first year studies of the Albany Medical College as a substitute for the studies of the first two terms of the Senior year in Union College. This enables medical students to lessen the time of their academic and professional studies by one year.

For tuition charges, see page 92.

ADMISSION

General Conditions

The regular entrance examinations are held on Thursday and Friday immediately following Commencement; and on the Tuesday, Wednesday and Thursday of the first week of the Fall term as indicated in the calendar; also, at the opening of any term. Special provision will be made, on application, for June entrance examinations to be held in other places to suit the convenience of applicants. A fee of \$5 will be charged for admission to these examinations.

Candidates must be at least sixteen years old, and, as a preliminary to the entrance examinations they must, on the first day set for examinations, (see page 46) present to the President satisfactory testimonials of character, and register for the necessary examinations.

Candidates from other colleges must bring letters of honorable dismissal, and must pass satisfactory examinations, or present acceptable certificates.

Candidates for a degree must enter before the close of the first Senior term.

All candidates will be examined in the English requirements, but in other subjects, Regents' diplomas or certificates from schools approved by the Faculty, will be accepted so far as they cover the requirements. Blank certificates, to be filled out by principals of schools, will be furnished upon application to the Dean. Candidates are requested to take, if possible, the uniform entrance examinations offered by the Association of Colleges and Preparatory Schools for the Middle States and Maryland. Information concerning the time and place for these examinations can be obtained by writing to President Nicholas Murray Butler, Columbia University, New York City.

Candidates for any other than the Freshman class are examined also in all studies previously pursued by that class.

Requirements for Examination in 1902

I. A. B. COURSE

Candidates for admission to the course leading to the degree of A. B. will be examined in the following subjects:

1.—ENGLISH.

All candidates for admission to the Freshman class will be required to pass a written examination in English, and no candidate will be admitted whose work is seriously defective in spelling, punctuation, grammar, or division into paragraphs.

Questions will be set on topics and extracts drawn from the following books. The first list consists of works to be read carefully with a view to the absorption of the subject matter, *i. e.*, as books are generally read. The second list consists of books to be read with critical care, in annotated editions, and with reference to dictionary, grammar and rhetoric. The questions on this set will relate to literary form and logical structure as well as to substance.

LIST (1) FOR GENERAL READING.

Shakespeare's "The Merchant of Venice;" Pope's "Homer's Iliad," books I., VI., XXII. and XXIV.; Addison's "The Sir Roger de Coverley Papers," from "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Rime of the Ancient Mariner;" Scott's "Ivanhoe;" Cooper's "The Last of the Mohicans;" Tennyson's "The Princess;" George Eliot's "Silas Marner;" Lowell's "The Vision of Sir Launfal."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's "Essays on Milton and Addison."

Attention is called to the fact that while no examination in grammar or rhetoric, as such, will occur, yet a knowledge of the essential principles of grammar and of the elementary principles of rhetoric is involved in the above requirements.

An acquaintance with the general outline of the development of English literature will also be required. Pancoast's *Introduction to English Literature* and Halleck's *History of English Literature* are recommended.

2.—MATHEMATICS.

Arithmetic; Algebra, through Quadratics; Plane Geometry.

In Arithmetic the examination will be on the following subjects: factors and multiples, common and decimal fractions, square root, the more important tables and operations of denominate numbers, percentage and simple interest, compound interest for integral periods only, bank discount, stocks and bonds, and the metric system.

In his preparation in Algebra, the candidate should give special attention to factoring, fractional exponents and radicals, and the solution of quadratic equations by factoring and by the formula resulting from the solution of the equation $ax^2+bx+c=0$.

3.—LATIN.

(a) Latin Grammar and Latin Composition (Daniell's "Exercises in Latin Composition," or an equivalent); four books of Cæsar's Gallic War, or Arrowsmith and Whicher's "First Latin Readings" (preferred); six books of Vergil's *Æneid*; six orations of Cicero; two thousand lines of Ovid, or Sallust's *Catiline*; the "Roman Method" of pronunciation.

The Grammars of Bennett, Allen and Greenough, Harkness, and Gildersleeve-Lodge are recommended.

(b) Roman History, including Ancient Geography.

4.—GREEK.

(a) Goodwin's Greek Grammar; Pearson's "Greek Prose Composition" or an equivalent; Xenophon's Anabasis, four books; Homer's Iliad, three books, including Prosody.

(b) Botsford's History of Greece.

(c) The Geography of Ancient Greece.

[The attention of instructors is particularly directed to the student's need of a full and accurate knowledge of the Greek and the Latin Grammar.]

5.—HISTORY OF THE UNITED STATES.

6.—MODERN GEOGRAPHY.

7.—PHYSIOLOGY.

II. PH. B. COURSE

Candidates for admission to the Freshman class in the course leading to the degree of Ph. B. will be examined in the following subjects:

1.—ENGLISH, as for the A. B. Course, page 40.

2.—MATHEMATICS, as for the A. B. Course, page 41.

3.—LATIN, as for the A. B. Course, Page 41.

4.—GERMAN.

(a) A knowledge of grammar, comprising declension of nouns, adjectives and pronouns; conjugation of verbs; the simpler rules of syntax and word-order.

(b) Ability to translate at sight a passage of easy German prose, a vocabulary of the less usual words being given; and to convert simple English sentences into German. The candidate must have read, concurrently with the work in the grammar, at least 100 pages of prose and poetry from various standard authors.

5.—HISTORY OF THE UNITED STATES.

6.—MODERN GEOGRAPHY.

7.—PHYSIOLOGY.

III. B. S. COURSE

Candidates for admission to the Freshman class in the course leading to the degree of B. S. will be examined in the following subjects:

1.—ENGLISH, as for the A. B. Course, page 40.

2.—MATHEMATICS, as for the A. B. Course, page 41.

3.—ADDITIONAL MATHEMATICS.

(a) SOLID GEOMETRY.

(b) PLANE TRIGONOMETRY.

4.—PHYSICS.

An elementary knowledge of Physics, such as may be gained by a year's course of study covering Mechanics, Sound, Heat, Light and Electricity. Preparation should include individual laboratory work, attested by a note-book, comprising at least thirty-five exercises, chiefly quantitative.

For recitation work Gage's "Elements of Physics" is recommended as a text-book.

5.—GERMAN, as for the Ph. B. Course, page 42; or Latin, as for the A. B. Course, page 41.

6.—HISTORY OF THE UNITED STATES.

7.—MODERN GEOGRAPHY.

8.—PHYSIOLOGY.

IV., V. and VI. B. E. COURSES

Candidates for admission to the Freshman class in any of the courses leading to the degree of B. E. will be examined in the same subjects that are required for admission to the B. S. Course, page 43.

Requirements for Examination in 1903

IN GERMAN.

IN PH.B., B.S. AND B.E. COURSES.

A knowledge of grammar, comprising declension of nouns, adjectives and pronouns; conjugation of verbs; the simpler rules of syntax and word-order.

Ability to translate at sight a passage of easy German prose, a vocabulary of the less usual words being given; and to convert simple English sentences into German. The candidate must have read, concurrently with the work in the grammar, at least 300 pages of prose and poetry from various standard authors. In most cases two years' work will be necessary to meet this requirement.

IN ENGLISH IN ALL COURSES.

LIST (1) FOR GENERAL READING.

Shakespeare's "The Merchant of Venice" and "Julius Cæsar;" "The Sir Roger de Coverley Papers" in "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Rime of the Ancient Mariner;" Scott's "Ivanhoe;" Carlyle's "Essay on Burns;" Tennyson's "The Princess;" Lowell's "The Vision of Sir Launfal;" George Eliot's "Silas Marner."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's "Essays on Milton and Addison."

All other requirements as in 1902

Requirements for Examination in 1904

IN ENGLISH IN ALL COURSES.

LIST (1) FOR GENERAL READING.

Shakespeare's "The Merchant of Venice" and "Julius Cæsar;" Addison's "The Sir Roger de Coverley Papers" from "The Spectator;" Goldsmith's "The Vicar of Wakefield;" Coleridge's "The Rime of the Ancient Mariner;" Scott's "Ivanhoe;" Carlyle's "Essay on Burns;" Tennyson's "The Princess;" Lowell's "The Vision of Sir Launfal;" George Eliot's "Silas Marner."

LIST (2) FOR MINUTE AND CRITICAL STUDY.

Shakespeare's "Macbeth;" Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso;" Burke's "Speech on Conciliation with America;" Macaulay's "Essays on Milton and Addison."

•
All other requirements as in 1903

ENTRANCE EXAMINATIONS

1902

Thursday, Friday, June 12, 13.

Tuesday, Wednesday, Thursday, September 16-18.

Candidates will present their credentials at the office of the President at 10 A. M. on the first day and register for examination.

Only those who register on the first day will be admitted to the examinations of the following days.

SCHEDULE OF EXAMINATIONS

First day, Spring; Second day, Fall.

9 A. M. Arithmetic.	11 A. M. Algebra.	2 P. M. U. S. History.
Geography.		3 P. M. English.
Physiology.		

Second day, Spring; Third day, Fall.

9 A. M. Latin.	11 A. M. German.	2 P. M. Greek.
Solid Geometry.	French.	Plane Geometry.
		Plane Trigonometry.

DEPARTMENTS OF INSTRUCTION**The Greek Language and Literature**

ACTING PROFESSOR BENNETT

Greek is prescribed in the A. B. course throughout the Freshman and Sophomore years. The object kept constantly in view throughout the course is not merely to teach so many works of an unknown tongue, but to instruct and educate the pupil by a system of mental training grounded upon the works of the most noble poets, dramatists, historians and philosophers of the ancient world. To this end the pupil is taught not only to translate into accurate and idiomatic English, to analyze with great care the grammatical construction and to compare it with that of his own tongue, but especially to obtain a thorough knowledge and critical appreciation of the authors selected for his use.

Although there must be a general uniformity in the order in which different authors are read, yet no particular works are assigned to the several terms. The proficiency of each class determines the character of the book to be read. Furthermore, an opportunity is offered to students of the two upper classes to continue their studies in this department, by assigning to them for the three terms of the Junior and Senior years respectively, two hours per week of elective work in Greek. It is not thought advisable to limit any particular subject to any one term; but, as the need of the student is made plain, the attempt will be made to satisfy it. The works presented for consideration are in general these:

Freshman Year

1. **Homer's Iliad:** Books XVIII, XXII and XXIV; Herodotus, selections from Books VI and VII; Xenophon's Memorabilia, selections from Books I and II; Prose Composition.

Sophomore Year

2. One play each of Aeschylus, Sophocles and Euripides; Plato's Apology and Crito.

Junior Year (elective)

3. Selections from Plato; one play of Aristophanes; selected books of the Odyssey.

Senior Year (elective)

4. Thucydides, Book I; Demosthenes De Corona; Plato's Phaedo.

Senior Year (elective)

5. The Gospel according to St. Mark; The Acts of the Apostles; The Epistles to the Corinthians.

Candidates for Honors

6. **Candidates for Honors** will be required to take all of the elective courses in Greek, to meet two additional hours a week during the Senior year for the study of a prescribed author, and to write a thesis on an assigned topic.

The Latin Language and Literature

PROFESSOR ASHMORE.

The Freshman and Sophomore studies in this department are prescribed in the A. B. and Ph. B. courses. The Junior and Senior courses are elective. The following programme is intended to indicate the general scope of the work of the four classes. Equivalent may be substituted at the discretion of the head of the department.

Freshman Year

1. **Cicero:** Cato Maior (Rockwood). **Livy:** Books I, XXI (Greenough and Peck, or Lord). **Latin Composition.** Four hours weekly throughout the year.

Sophomore Year

2. **Horace:** Selected Odes, Satires and Epistles (Odes by Clement Lawrence Smith or Bennett; Satires and Epistles by Kirkland or Rolfe; or Horace entire by Page, Palmer and Wilkins). **Terence:** Adelphoe (Ashmore). **Plautus:** Captivi (Elmer or Morris or Hallidie). Three hours weekly throughout the year.

Junior Year

3. **Juvenal:** Principal Satires (Gow or Wright). Two hours weekly. First Term.
4. **Lectures on the private life of the ancients**, with collateral reading. Two hours weekly. Open to Seniors also. Second term.
5. **Cicero's Letters, or Letters of Pliny the Younger.** Two hours weekly. Third term.

Senior Year

6. **Rapid reading of Terence's plays.** Two hours weekly. First term.
7. **Lectures on the monuments and topography of Greece and Rome.** Two hours weekly. Open to Juniors also. Second term.
8. **Lucretius** (Kelsey or Lee); or Lectures, etc.; continued. Two hours weekly. Third term.

Special Honors in Latin

Candidates for special honors will undertake additional reading, to be assigned not later than the opening of the Spring Term of the Junior year, and will be examined therein at the close of their undergraduate course.

Modern Languages

PROFESSOR WELLS, ASSISTANT PROFESSOR WILKENS AND MR. MARCH

The study of modern languages is required of all students.

The primary object is to give students in every course a thorough literary training by means of the study of some of the great masterpieces of French and German literature, and to broaden their mental horizon by acquainting them, through reading and lectures, with the life and thought of the greatest nations of continental Europe.

In the classical course a knowledge of modern languages supplements and completes the linguistic and literary training obtained through the study of languages of the ancient world, and in the scientific and engineering courses the department purposes to give, through a longer and more careful study of the thought

and speech of the modern world, a culture as nearly as possible equivalent to that obtained through classical study.

Another purpose is to prepare the student for special work in his chosen department. The instruction given to the classical student is immediately useful in his philological studies, and is also a preparation for more advanced work, both before and after graduation. In the scientific and engineering courses the student gains, early in the course, a knowledge of French and German that enables him to read scientific works in those languages during the later years of his course.

During the Junior and Senior years, electives are offered in Spanish and in the advanced study of French and German, both in reading and conversation.

More advanced courses, leading to special honors in French and German, are also offered to those students who are found qualified to pursue them, by the superior excellence of their work in the required and elective courses.

The English Language and Literature

PROFESSOR TRUAX

I. English Language

1. **Anglo-Saxon Prose.**—Elements of grammar, and readings in the *Gospels*, *Aelfric*, *Aelfred*, the *Chronicles*, and *Wulfstan*. First term Junior. Two hours weekly.

2. **Anglo-Saxon Poetry.**—Reading of *Battle of Maldon*, or *Brunanburh*, *Judith*, the *Wanderer*, and portions of *Caedmon* and *Béowulf*, with attention to language, verse, and Anglo-Saxon life and character. Second term Junior. Two hours weekly.

3. **Early Middle English.**—The chief linguistic features of the Southern dialect are studied in the *Ancren Riwle*, and of the East Midland dialect in the *Ormulum*. Second term Junior (in part). Two hours weekly.

4. **English Philology.**—A systematic study of the development of the English tongue, based on the linguistic work of Courses 1, 2 and 3. Third term Junior. Two hours weekly.

II. English Literature

5. **Chaucer and the Early Poets.**—Lectures giving a brief summary of the origin of English literature and its development

prior to the 14th century; study of a manual giving the characteristics of Chaucer and the chief poets of the 14th and 15th centuries, and illustrative readings. The *Prologue*, the *Knights Tale*, and the *Nonne Preestes Tale* of the *Canterbury Tales* are read in full, and attention is directed to language, verse, literary art, ethical quality, and social life portrayed. Required in A. B., Ph. B. and B. S. courses. Second term Sophomore. Three hours weekly.

6. Shakespeare and the Dramatists.—Lectures and text-book study of the origin and characteristic features of the English drama, and its history to the Restoration, with critical study, literary rather than linguistic, of several of the plays of Shakespeare, selected to represent the growth of his genius, together with interpretative and assigned readings in Marlowe and other leading dramatists. Required in the second term Sophomore of the Engineering, and in the third term Sophomore of the other courses. Two hours weekly.

7. The English Essayists.—A brief survey of the development of English prose, and a series of critical studies of typical essays of *Bacon*, *Addison*, *Macaulay*, *DeQuincey* and *Carlyle*. Required in all courses. First term Sophomore in B. E. course. First term Junior in other courses. Three hours weekly.

8. Prose Fiction and Modern Poetry.—A study of the origin and early development of the novel on the basis of Raleigh, with lectures on later tendencies in fiction, and assigned readings in particular authors, resulting in reports and discussions.

Lectures on the nature and elements of poetry, and critical studies of the principal types produced between the Elizabethan and the Victorian Age. Second term Junior. Required in A. B., Ph. B. and B. S. courses. Two hours weekly.

9. The Great Orators.—Lectures on the art of the orator, and critical study of great political and forensic speeches, English and American, with practice in drawing briefs, and reports on assigned reading. Required in B. S. course. Third term Junior. Two hours weekly.

10. Anglo-Saxon and Middle English Literature.—In connection with the linguistic study in 1, 2 and 3, the life and literary art of the period are exhibited, by illustrative read-

ings, references and lectures. Elective in A. B., Ph. B. and B. S. courses. Junior year. Two hours weekly.

11. American Literature.—A series of lectures on *Colonial Literature, Franklin, Irving, Emerson, Lowell, Holmes, Bancroft, Parkman, Prescott, Motley, Bryant, Longfellow, Poe, Whittier, Whitman, Brown, Cooper and Hawthorne*, together with the discussion of assigned readings. Elective in all courses. First term Senior. Two hours weekly.

12. The Victorian Period in English Literature.—An attempt to estimate the spirit of the literary product of the age as a whole, with special attention to Tennyson, Browning and Matthew Arnold. Other periods, similarly treated, may be substituted for the Victorian. Elective in all courses. Second term Senior. Two hours weekly.

13. The Philosophy of English Literature.—A review of the entire history of English literature with the purpose of showing its unity, the logic of its development, the formative influences that generate changes and determine periods, and the relation that literature holds to life. Elective in all courses. Third term Senior. Two hours weekly.

14. Studies in Literary Criticism.—A survey of the chief points of view from which literature has been regarded by the leading critics, and a discussion of some fundamental standards of judgment. Offered in substitution for course 13 in certain years.

Rhetoric and Logic

PROFESSOR HALE

The work of the department is based upon the following principles:

1. Criticism of the student's work in composition should be explained in personal conference.
2. Rhetoric and Logic where presented systematically, should be taught as far as may be in constructive fashion.
3. More stress should at first be laid upon Rhetoric as an art.
4. In later years there should be ample opportunity for acquaintance with the real problems of Rhetoric, descriptive, critical and historical.

Prescribed Work

Freshman Year

English Composition. Two hours. Second term, all courses.

Constructive Rhetoric. Three hours. Third term, all courses.

Sophomore Year

Constructive Rhetoric. Three hours. First term, A. B., Ph. B. and B. S. courses.

Logic. Two hours. Second and third terms, A. B., Ph. B. and B. S. courses.

Essays and Orations. Second and third terms, all courses.

Junior and Senior Years

The prescribed work for Junior and Senior years consists of two rhetorical exercises a term for all courses. These exercises will usually be one essay and one oration, although this arrangement may not be strictly held to. One exercise only is prescribed for the third term Senior.

Elective Courses

Argumentation. Two hours. For Juniors.

History of English Style. Two hours. For Seniors.

History and Sociology

PROFESSOR RIPTON AND ASSISTANT PROFESSOR JONES

The work of the department covers three years, beginning with the first term of the Sophomore year. It is designed to give such a general knowledge of History, Economics and Sociology as belongs to a liberal education. At the same time sufficient work is offered in the electives to prepare those students who desire to take up graduate work in these subjects. The instruction is given by text-book, by lectures, and by library references, the students reporting the results of their reading partly during the regular work of the class, and partly in the form of essays. The subjects covered by the courses are in detail as follows:

1. English History. The narrative history of England is taught chiefly, but considerable time is devoted to the industrial, commercial and social history of the country and to the development of the English Constitution. The importance of collateral readings from the English authorities is emphasized. First and second terms Sophomore. Two hours a week. *Required.*

2. French History. A preliminary study is made of the different racial elements that entered into the population of the country. The historical period treated of begins with the foundation of the French monarchy. The design in particular is to show the growth of the French nation and the working of the different forces which promoted or retarded French unity. The period studied concludes with the year 1789. The history of France from that date to the present is taken up in greater detail in Course 7. Third term Sophomore. Two hours a week. *Required.*

3. Middle Ages, Renaissance and Reformation. The broad outlines of the history of Europe from the beginning of the Christian Era to the Peace of Westphalia, 1648, are considered. Particular attention is given to the great historical events and institutions that mark this period in their relation to cause and result. First, second, and third terms Junior. Two hours a week. *Elective.*

4. American History. A study is made of the period of American discovery and exploration and of the colonial period. The main part of the work, however, begins with an examination of the causes of the American Revolution. The course is guided by lectures and the work is done in the library among the authorities.

Course 4 includes a special study of the history of the State of New York, to which one hour a week is given, covering the colonial period under the Dutch and the English and the history of the State to the close of the Civil War. It is based upon lectures and research work in the library among the sources and authorities. First, second, and third terms Junior. Three hours a week. *Elective.*

5. French Revolution and Nineteenth Century. This course considers the political, social and economic causes and reactionary results of the French Revolution. It then takes up an examination of the events and forces which contributed to the unification of Italy and Germany and concludes with a brief study of the Eastern Question. The course is designed to give a clear understanding of political affairs as they exist in Europe to-day and the historical processes by which they were brought about. First, second and third terms Senior. Three hours a week. *Elective.*

6. Comparative Politics. A study is made of the state and national systems of the American Government, together with the general duties and powers of the legislative, executive and judicial branches of the same. A comparative study is then made of the principal governments of Europe, with reference especially to the provisions of their present constitutions and the way in which those constitutions have been developed and may be amended. The course is completed by a study of International Law with reference especially to origin and development. First, second and third terms Senior. Three hours a week. *Elective.*

7. Economics. It is the design of this course to give instruction in the leading principles of Economics. While a text-book is used in order to secure more rapid progress, still the views of no school are taught exclusively. By lectures and required collateral reading an attempt is made to present the results of the latest and most approved investigations in the science. The course closes with a series of lectures upon Money and Banking and the History of Political Economy. First term Senior. Three hours a week. *Required in all courses.*

8. Sociology. In this course the mutual relations of men in society are examined historically, that the student may learn how present conditions have resulted from past experience. Present social forces and needs are considered with the purpose of training the students to fulfill the demands of good citizenship. The collateral reading and practical sociological investigation are guided throughout the course by lectures. Second and third terms Senior. Three hours a week. *Required in all except Engineering courses.*

Mental and Moral Philosophy

PROFESSOR HOFFMAN

The course in Philosophy begins with the second term Junior and extends through the entire Senior year. Experimental Psychology and elementary Ethics, the former coming the second and the latter the third term of the Junior year, are required. All the other courses are elective. Instruction in the various studies of the department is usually given by means of lectures, discussions and the use of a text-book.

The course in Experimental Psychology is designed to acquaint the student with the most obvious facts of his mental experience. The chief problems discussed are sensation, localization of functions, memory, conception, the emotions and the will; as far as possible the positions taken up are illustrated and confirmed by actual experiments. The facts of Pathological Psychology are also here briefly considered, especially such abnormal forms of consciousness as aphasia, hypnotism, double personality and insanity.

As Elementary Ethics is a required study, only the outlines of the subject are presented in this course. The history of ethical theories is first briefly reviewed and then the present aspects of the subject are discussed. The relation of Ethics to other sciences is pointed out and much attention is given to the ethical problems involved in such questions as taxation, transportation, corporations, the treatment of criminals, the care of the poor, and the formation and dissolution of the family.

The study of the History of Philosophy begins with the first term Senior year and comes three hours a week for three successive terms. The object of the course is to go over with considerable detail the general field of Philosophy from the earliest times down to our own day and to present for consideration and discussion the views of the great thinkers of the world upon the validity of knowledge, the existence of God, the nature of virtue, the foundation of the State and other problems of similar import. Much is made of the historical connection of the different systems for the purpose of impressing upon the mind of the student the successive steps that have been taken in the actual development of thought.

Courses in Advanced Psychology and Advanced Ethics are offered to the Seniors during the first and second terms respectively in which the higher problems suggested in the elementary courses receive more extended treatment.

During the third term Senior the principal studies of this department are: Political and Social Philosophy and the Evolution of Religion. Under this last head the chief ideas of the leading religions of the heathen world are critically examined, their excellencies and defects pointed out and a comparison made of them with the special doctrines of the Christian system.

Mathematics

PROFESSOR WRIGHT AND MR. EDWARDS

1. Solid and Spherical Geometry. *Wentworth's Geometry.* Required of Freshmen in the A. B. and Ph. B. courses.

2 a. Algebra. *Wells' College Algebra. Hall and Knight's Algebra.* Freshman required.

2 b. Algebra. The Theory of Equations, including the elements of Determinants. Open only to those who have taken 5 a. Junior elective.

3 a. Plane and Spherical Trigonometry. *Wentworth.* Freshman required.

3 b. Advanced Trigonometry. *Loney's Trigonometry, Part II.* Junior elective.

4 a. Analytic Geometry. *Ashton's Analytic Geometry.* Freshman and Sophomore required.

4 b. Analytic Geometry, advanced course. *C. Smith's Conic Sections.* Junior and Senior elective. Open only to those who have taken 2 b.

4 c. Solid Analytic Geometry. *C. Smith's Solid Geometry.* Junior and Senior elective. Open only to those who have taken 4 b.

5 a. Differential and Integral Calculus. *Taylor's Calculus.* Required of Sophomores in the B. S. course. Junior and Senior elective to others.

5 b. Calculus, advanced course. *Greenhill.* Senior elective. Open only to those who have taken 4 b and 5 a.

6. Differential Equations. *Murray.* Senior elective. Open only to those who have taken 5 b.

Candidates for special honors in Mathematics may take course 4 b, 4 c, 5 b, or 6.

Mechanics and Physics

ASSISTANT PROFESSOR OPDYKE AND MR. WHEELER

The general course in Mechanics and Physics extends through three terms. The subjects taken up are, in order, Mechanics, Sound, Heat, Light, Magnetism and Electricity. For illustration of the class-room work, an extensive collection of modern physical apparatus has been obtained. The text-books used are Wright's Mechanics, Gage's Principles of Physics and Ames' Theory of Physics.

Elective courses in Heat and Light are offered during Senior year. Also an Elective course in Mathematical Physics during Senior year.

A course in Laboratory Physics is required of students in the B. S. and B. E. courses beginning with the third term of Sophomore year, and offered to all Seniors as an elective of two hours a week throughout the year. The phenomena of Mechanics, Sound, Heat, Light and particularly those of Electricity and Magnetism are studied by means of experiments performed by

the students, and the laws which these phenomena involve are established by quantitative measurement. The course is intended as a preparation for further independent work and includes practice in the use of instruments of delicacy and precision. Sabine's Laboratory course in Physical Measurement, Glazebrook and Shaw's Practical Physics and Nichol's Laboratory Manual of Physics are used as text books.

The course for special honors in Physics extends through three terms. The subjects vary from year to year.

For laboratory fees see page 92.

Chemistry

ASSISTANT PROFESSOR CURTISS

The chief aim of the instruction in this department is to give the student a sound training in the modern methods of pure science, and to develop thereby accurate observation, logical reasoning, and the power of forming correct judgments on observed facts. The courses are intended quite as much as a liberal culture training, as for the practical use that may afterward be made of the knowledge gained. The student desiring to specialize in Chemistry, or to take up the study of Medicine, Biology, Geology, or other branches of Natural Science, will find the courses, and the exact training required, to be of the greatest value.

All courses are open as electives.

1. General Chemistry. Three hours a week for one year. Recitations, lectures and two hours in the laboratory. In this course the student studies the commoner elements and their compounds, and the fundamental laws and theories connected with the science. The subject matter of the recitations is illustrated by charts, and by experimental lectures, the student repeating as many of the experiments as is practicable the same day, in the laboratory, being taught to observe carefully, reason out his own results, and to keep careful, accurate notes of all work performed. Required of all except candidates for the A. B. degree, and elective with them in Junior and Senior years.

Text-books: Remsen's Introduction to the Study of Chem-

istry, Briefer Course. Remsen's Chemical Experiments. The Advanced Course, by the same author, is recommended for collateral reading.

1. a. General Chemistry. Two hours a week of laboratory work, to be taken only in conjunction with Course 1, and intended for students who wish to go more deeply into the subject.

2. Qualitative Analysis. This course consists of six hours per week in the Laboratory, in connection with quizzes and informal lectures given usually in the Laboratory. In this work the student familiarizes himself further with the more important elements, their compounds and reactions. The knowledge thus gained is classified and systematized, the elements separated into groups, and eventually each member of these groups is separated and identified by appropriate tests. The worker is thus led on from a study of known substances to complex mixtures of unknown composition, where the knowledge first gained of chemical properties and reactions is practically tested. No new work is allowed to be taken up until a successful result, proved to be correct, is obtained.

Text-books: J. H. Well's Laboratory Guide in Qualitative Analysis, and Fresenius' Qualitative Analysis; Remsen's Inorganic Chemistry, Advanced Course, for reference. Course 2 elective after Course 1.

2 a. Same as course 2. Six hours extra in the laboratory. Elective.

3. Quantitative Analysis. This course consists of six hours in the laboratory as in 2. The student studies systematically the various gravimetric and volumetric methods of analysis first of simple, then of complex chemical compounds, mineral substances, natural products, etc., etc. A thorough course in Elementary Organic Analysis is also included. Course 3 is elective after 1 and 2. This course is especially valuable in training one in that art of delicate manipulation so essential to success in many departments of scientific work.

3 a. Same as 3, with an additional six hours in the laboratory. Texts: Fresenius' Quantitative Analysis, and various works of reference in the library.

4. Organic Chemistry. Three hours a week for one year. Recitations and illustrated lectures. A systematic study of the more important typical members of the Fatty and Aromatic Series with reference to their occurrence in nature and their economic uses. A thorough exposition of the fundamental principles and most recent theories of Organic Chemistry is included. Elective after Course 2. Text-books: A. Berntsen's Organic Chemistry. Other more extensive works will be assigned for reference.

5. Organic Chemistry. Three or six hours a week in the laboratory. Here a study of the methods of making typical organic compounds is undertaken, as well as the means employed to purify and test them. This course is preparatory to research work in Organic Chemistry. Open as an elective after, or in conjunction with, Course 4.

Graduate work in this department is offered on the subjects outlined in the above courses, also research work on selected subjects in Organic Chemistry.

For laboratory fees see page 92.

Biology and Geology

PROFESSOR STOLLER

1. Elementary Biology.—This course is intended to give the student a knowledge of living plants and animals and to afford mental training in the study of nature. The work begins with the study of protoplasm, cells, tissues and organs, as parts common to plants and animals; then a series of types, first of animals and afterward of plants, is carefully studied on the basis

of morphology, physiology and development. Two hours of recitations and two hours of laboratory work per week throughout the year. Required of Sophomores in the B. S. course.

2. General Biology.—This course is more advanced than the preceding and while the observational study of a series of types is made the basis of the work the main purpose is to afford the student a grasp of the ideas of biological science in their general philosophical relations. Recitations and laboratory work, counting as three hours in the first term and two hours in the second term. Required of Juniors in the Ph. B. course.

3. General Principles of Zoology.—The aim of this course is to use the data of zoology for their worth as contributing to liberal culture. The more general facts and principles of animal structure, function and development are reviewed and considered in their relation to the study of man. The scientific evidences of organic evolution and the theories of evolution of various authors are considered. Recitations and lectures, three hours per week, third term. Required of Juniors in the A. B., Ph. B. and B. S. courses.

4. Animal Morphology.—This course is adapted for students who wish a somewhat advanced knowledge and training in biology, especially as a preparation for teaching or for the medical profession. The work consists of laboratory study by microscope and dissection of a progressive series of animal types, including the anatomy of a mammal in detail, accompanied with the reading of a text on general zoology. Four hours of laboratory work and one recitation per week throughout the year. Elective to Seniors.

5. Bacteriology.—Students who have elected Course 4 may be permitted to take, in the third term, elementary practical bacteriology in place of a part of the anatomical work.

6. Geology.—The instruction in this course is adapted primarily to the study of the science as a branch of liberal culture, but enough practical work is included to afford a foundation for special study or for teaching. The work begins with the examination of the more common minerals and rocks and passes to

the study of structural geology, one or two field excursions being made. The principles of dynamical geology are then considered after which the time is given to systematic geology and paleontology. In the third term the work is field work, supplemented by reading. The geological formations readily accessible from Schenectady are inspected and readings from the State geological reports are made. Three hours in the first term, two in the second and three in the third. Elective to Juniors and Seniors. Until further notice this course will be given on alternate years. It will not be given in the year 1902-03.

7. Economic Geology.—In this course, after a brief study of the principles of dynamical and structural geology, the work is related to the occurrence and distribution in the United States of building stones, mineral ores, coal and other economic products. Recitations, lectures and some laboratory work, three hours a week, first Junior term. Required of engineering students.

Physiology and Physical Education

DR. TOWNE

Human Anatomy, Physiology and Physical Education are required in all courses. Physiology is taken up in the Freshman year and consists of recitations illustrated by dissections from some of the lower animals. A thorough study of the human body is made, so that the student is more able to understand the benefits resulting from systematic bodily exercise.

The course in the gymnasium is so arranged as to give a practical knowledge of the different apparatus pertaining to physical training. Commencing with light work, consisting of free gymnastics, club, dumb-bell and wand exercises, the course leads through a graded series, involving heavier work as the student becomes fitted for it.

After the study of physiology, and gymnasium work of the previous year, the student is prepared for the study of Physiology of Exercise, in which course the results of exercise, as to its effects on the body, are taken up and discussed from a physiological standpoint.

It is the aim of the department to give the student such a training in the methods of Physical Education that he may have a comprehensive knowledge of the subject, and to secure health, vigor and such harmonious development of the body as will fit it to resist disease, and prepare it for efficient service, both now and later in life.

A thorough physical examination of each student is made in the fall, and the measurements are outlined on charts, so as to show the parts below the normal development, for which special exercises suited to the health and physical condition of each individual are prescribed. In the spring measurements are taken again and the improvement noted.

In connection with the college is a large gymnasium well equipped with new apparatus and thoroughly adapted to the purpose of providing excellent opportunities for physical training. It is open from 7 A. M. to 6 P. M. during the college year, to all classes for voluntary work. All kinds of athletic sports are encouraged, as much as possible, under the advice and guidance of the department.

Lectures

It is the policy of the College to provide its students with the advantages of frequent lectures by specialists in the various departments of knowledge.

In addition to these Professor William Wells, LL. D., delivers each year a course of lectures on current history. The range and importance of these lectures are indicated by the following list of subjects: "Cuba, Mexico and Central America," "German Universities and German Politics," "The Pacific Slope and its History," "Modern France," "Alaska and the Yellowstone Park," "Greece and Turkey," "Egypt and the Nile," "Northern Africa and Moorish Spain," "The Scandinavian Norseland," "All the Russias," "The Story of the Canadas," "The Schools and Scholars of the Germany of To-day," "Idiomatic Analogies of the Principal European Tongues," "Our West Indian Acquisitions," "The Isles of the Caribbean Sea," "Personal Memories of Some of the Most Distinguished Professors of the German Universities in my Day."

THE LIBRARY

The library is open every week-day from 8 A. M. to 12:30 P. M., from 2 P. M. to 6 P. M., and from 7 P. M. to 9 P. M. It occupies the building erected for it by the widow of the late F. H. Powers, of Philadelphia. Among its special attractions are the excellent engineering and scientific library of the late Professor Gillespie, the collection of mathematical works made by the late John Patterson, of Albany, and the library of the late Hon. Henry J. Cullen, of the class of 1860. The income from a bequest of five thousand dollars left by the late Lemon Thomson, Esq., of the class of 1850, of Albany, is devoted to the purchase of books on American subjects, especially history and political science. An entire alcove, known as the "Thomson Alcove," is reserved for these books. By the will of the late Rev. Oscar Blakeslee Hitchcock, of the class of 1852, a bequest of upwards of thirty thousand dollars was left to the College for the purchase of books, manuscripts, etc. The librarian and his assistants are always ready to aid the student in his study and investigation, and to furnish him needed information regarding the direct personal use of indexes, catalogues and other library tools.

In the periodical reading room of the library will be found the current issues of about ninety of the most important magazines, reviews, periodicals and newspapers, both American and foreign, as well as the transactions of a number of the learned societies and organizations.

Any student is allowed to withdraw books from the library upon making a deposit of five dollars which can be taken up at any time.

THE NATURAL HISTORY MUSEUMS

PROFESSOR STOLLER, CURATOR

Biological Museum

In Zoölogy, the local fauna is represented by a considerable collection of mounted birds, by a number of skulls, skeletons and mounted specimens of mammals, and by alcoholic specimens of reptiles and fishes. In the department of invertebrates the collections of marine animals made by Dr. Harrison E. Webster are extensive, including sponges, corals, worms, crustacea and molluscs, the total number of species represented being over 5,000. The Wheatley collection of shells presented by E. C. Delavan, Esq., consists of 8,000 specimens.

The Botanical collections include a nearly complete set of local flowering plants, the work of Professor Jonathan Pearson. To this there has since been added a complete set of the ferns and fern allies of Schenectady county.

The flora of the United States is further represented by collections from Virginia, the Red River region of the southwest and those made by Dr. Nevins in Alabama. The lower cryptogams are represented by an extremely valuable collection of 2,300 specimens of fungi the gift of Mr. J. B. Ellis.

The Herbarium also includes a considerable number of foreign plants, including representative collections from Germany, Spain, Asia Minor and England, as well as some specimens from Iceland, Norway, France and Switzerland. They have been sorted and distributed in a single series following the latest accepted sequence, that of Engler and Prantl's "Natürliche Pflanzenfamilien," making the entire collection of some 8,000 or 10,000 specimens readily accessible for reference and study.

Geological Museum

In Mineralogy, the Wheatley collection of minerals donated by E. C. Delavan, Esq., which is labeled according to the system of Dana, contains 4,000 specimens many of which represent the more valuable forms.

In Geology, there is a general collection of rocks and minerals, comprising some 3,000 specimens; and a considerable collection of Paleozoic and Mesozoic fossils.

The collections may be grouped under the three following heads:

I. A collection of rocks and minerals in part donated by the U. S. National Museum.

II. A collection of rocks and fossils from the Carboniferous, Permian and Cretaceous systems of the United States, deposited by the United States and Kansas Geological Surveys, which contains the type material described in the classification of the American Permian.

III. Rocks and fossils from the New York formations, principally from the Lower and Upper Silurian and Devonian systems.

The collections made by the geological department under the direction of Professor C. S. Prosser, so increased the museum that there is plenty of material now available for the careful study of the Paleozoic and Mesozoic geology of the United States. A systematic collection of the Paleozoic rocks and fossils, principally from the New York formations, has been arranged in the north gallery of the museum.

ORDER AND PROPORTION
OF STUDIES
FOR THE YEAR 1901-1902

A. B. Course

FRESHMAN YEAR

First Term

Hours per week.

- 4 Greek.
- 4 Latin.
- 4 Solid Geometry.
- 3 French.
- 2 Physiology.
- 1 Gymnastics.
- Greek Prose Composition.
- Latin Prose Composition.

Second Term

- 4 Greek.
- 4 Latin.
- 4 Algebra.
- 3 French.
- 1 Physiology.
- 1 Gymnastics.
- 2 Rhetoric.
- Greek Prose Composition.
- Latin Prose Composition.

Third Term

- 4 Greek.
- 4 Latin.
- 3 French.
- 3 Rhetoric.
- 3 Trigonometry.
- 1 Gymnastics.
- Greek Prose Composition.
- Latin Prose Composition.

Union College

A. B. Course

SOPHOMORE YEAR

 First Term

Hours per week.

- 3 Greek.
- 3 Latin.
- 3 Rhetoric.
- 3 Analytic Geometry.
- 3 German.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 Greek.
- 3 Latin.
- 3 German.
- 3 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

Third Term

- 3 Greek.
- 3 Latin.
- 3 German.
- 2 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
- One Essay.
- One Class Oration.

A. B. Course

JUNIOR YEAR

First Term

Hours per week.

- 4 Mechanics
- 3 German.
- 3 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Second Term

- 3 Psychology.
- 3 Physics.
- 2 German.
- 2 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Third Term

- 3 Biology.
- 3 Physics.
- 3 Ethics.
- 1 Rhetoric.
- 7 Elective.*

* For list of Electives, see page 83.

A. B. Course

SENIOR YEAR

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

* For list of Electives, see page 84.

Ph. B. Course

FRESHMAN YEAR

First Term

Hours per week.

- 4 Latin.
- 4 Solid Geometry.
- 3 German.
- 3 French.
- 2 Physiology.
- 1 Gymnastics.
- Latin Prose Composition.

Second Term

- 4 Latin.
- 4 Algebra.
- 3 German.
- 3 French.
- 1 Physiology.
- 1 Gymnastics.
- 2 Rhetoric.
- Latin Prose Composition.

Third Term

- 4 Latin.
- 3 Rhetoric.
- 3 Trigonometry.
- 3 German.
- 3 French.
- 1 Gymnastics.

Ph. B. Course

SOPHOMORE YEAR

First Term

Hours per week.

- 3 Latin.
- 3 Rhetoric.
- 3 Analytic Geometry.
- 3 German or French.
- 3 Chemistry.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 Latin.
- 3 German or French.
- 3 English Literature.
- 3 Chemistry.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

Third Term

- 3 Latin.
- 3 Chemistry.
- 2 English Literature.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

Ph. B. Course

JUNIOR YEAR

First Term

Hours per week.

- 3 Biology.
- 3 English Literature.
- 4 Mechanics
- 1 Rhetoric.
- 7 Elective.*

Second Term

- 2 Biology.
- 3 Physics.
- 3 Psychology.
- 2 English Literature.
- 1 Rhetoric.
- 7 Elective.*

Third Term

- 3 Physics.
- 3 Biology.
- 3 Ethics.
- 1 Rhetoric.
- 7 Elective.

*For list of Electives, see page 83

Ph. B. Course

SENIOR YEAR

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

* For list of Electives, see page 84.

B. S. Course

FRESHMAN YEAR

First Term

Hours per week.

- 3 French.
- 5 Algebra.
- 3 German.
- 3 Chemistry.
- 2 Physiology.
- 1 Gymnastics.

Second Term

- 3 French.
- 4 Trigonometry and Analytic Geometry.
- 3 German.
- 3 Chemistry.
- 1 Physiology.
- 2 Rhetoric.
- 1 Gymnastics.

Third Term

- 3 French.
- 3 Rhetoric.
- 4 Analytic Geometry.
- 3 German.
- 3 Chemistry.
- 1 Gymnastics.

B. S. Course**SOPHOMORE YEAR**

First Term**Hours per week.**

- 3 German or French.
- 3 Rhetoric.
- 5 Calculus.
- 3 Biology.
- 2 History.
- 1 Physiology of Exercise.

Second Term

- 3 English Literature.
- 5 Mechanics.
- 2 Logic.
- 3 Biology.
- 2 History.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

Third Term

- 2 English Literature.
- 5 Physics and Physical Laboratory.
- 3 Biology.
- 2 History.
- 2 Logic.
- 1 Physiology of Exercise.
One Essay.
One Class Oration.

B. S. Course

JUNIOR YEAR

First Term

Hours per week.

- 3 English Literature.
- 5 Physics and Physical Laboratory.
- 1 Rhetoric.
- 8 Elective.*

Second Term

- 3 Psychology.
- 2 English Literature.
- 3 Astronomy.
- 1 Rhetoric.
- 8 Elective.*

Third Term

- 3 Ethics.
- 3 Biology.
- 2 English Literature.
- 1 Rhetoric.
- 8 Elective.*

* For list of Electives, see page 83.

B. S. Course**SENIOR YEAR**

First Term

Hours per week.

- 3 Economics.
- 1 Rhetoric.
- 13 Elective.*

Second Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

Third Term

- 3 Sociology.
- 1 Rhetoric.
- 13 Elective.*

* For list of Electives, see page 84.

General List of Electives

[For limiting conditions, see statements of respective departments.]

JUNIOR YEAR

First Term

Hours per week.

- 2 Greek.
- 2 Latin,—Plautus.
- 2 Anglo-Saxon.
- 3 German.
- 3 French.
- 2 Theory of Equations, or Calculus.
- 3 American History.
- 2 European History.
- 2 Advanced Rhetoric,—Argumentation.
- 3 Chemistry. (For A. B. Course.)
- 3 Chemical Laboratory.
- 3 General Geology.

Second Term

- 2 Greek.
- 2 Latin,—Juvenal.
- 2 Anglo-Saxon and Early Middle English.
- 3 German.
- 3 French.
- 2 Advanced Trigonometry, or Calculus.
- 3 American History.
- 2 European History.
- 2 Advanced Rhetoric,—Argumentation.
- 3 Chemistry. (For A. B. Course.)
- 3 Chemical Laboratory.
- 3 General Geology.

Third Term

- 2 Greek.
- 2 Latin,—Lectures, Private Life of Greeks and Romans.
- 2 English Philology.
- 3 German.
- 3 French.

- 2 Advanced Rhetoric,—Argumentation.
 - 3 American History.
 - 2 European History.
 - 2 Advanced Rhetoric,—Argumentation
 - 3 Chemistry. (For A. B. Course.)
 - 3 Chemical Laboratory.
 - 3 General Geology.
-

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

First Term

Hours per week.

- 2 Greek.
- 2 Latin,—Lucretius.
- 3 Spanish.
- 2 American Literature.
- 2 History of Thought on Rhetoric and Style.
- 2 Solid Analytic Geometry, or Advanced Calculus.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 3 General Geology.
- 3 Comparative Politics.
- European History.
- 3 History of Philosophy.
- 3 Advanced Psychology.
- 3 Invertebrate Morphology.

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

Second Term

Hours per week.

- 2 Greek.
- 2 Latin,—Lectures, Monuments of Greece and Rome.
- 3 Spanish.
- 2 The Victorian Period in English Literature.
- 2 History of Thought on Rhetoric and Style.
- 2 Quaternions.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 2 Scientific Evidences of Evolution.
- 3 Vertebrate Anatomy.
- 3 Comparative Politics.
- 3 European History.
- 3 History of Philosophy.
- 3 Advanced Ethics.

General List of Electives

[For limiting conditions, see statements of respective departments.]

SENIOR YEAR

Third Term

Hours per week.

- 2 Greek.
- 2 Latin,—Teachers' Course, or Introductory
Course in Epigraphy.
- 3 Spanish.
- 2 Philosophy of English Literature, or English
Literary Criticism.
- 2 History of Thought on Rhetoric and Style.
- 2 Differential Equations.
- 2 Mathematical Physics.
- 2 Physical Laboratory.
- 3 Chemical Laboratory.
- 2 Theories of Evolution.
- 3 European History.
- 3 International Law.
- 3 Evolution of Religion.
- 3 History of Philosophy.
- 3 Comparative Vertebrate Anatomy.

THE
CURRICULUM
OF THE
B. E. COURSES

See pages 126-131

GENERAL REGULATIONS

Registration.—Every student must report at the Registrar's office at the beginning of each term and register college or local residence. Any change of residence during the term must be reported at once.

Residence.—Students are not allowed to change their college rooms during the term without permission of the President or Dean; for every change the sum of two dollars is added to the term-bill. Students must conform to college rules regarding keys.

Reports.—A daily record of attendance at class and chapel and of scholarship is kept and is transmitted at the close of each term, or more frequently, to the student's parent or guardian.

Standing.—There are four grades of scholarship:—from 9 to 10 inclusive, first grade; from 8 to 8.9, second grade; from 7 to 7.9, third grade; from 6 to 6.9, fourth grade. Any mark below six indicates failure, or, in the mathematical studies of the Engineering courses, any mark below seven.

Those receiving the three highest marks for the whole course in the Engineering Department and the seven highest marks in the other departments are entitled to appointment as Commencement Orators.

Absences in General.—Absences are recorded as of three kinds; permitted, excused and unexcused. No one but the President or Dean can authorize the record of an absence as permitted.

Absences are entered (in every course) against a student from the beginning of a term until he reports his return to the Registrar. A like report is required after absence because of sickness or permission.

Class-room Absences.—Students will be allowed, each term, as many absences without excuse, in any subject, as there are recitations per week in that subject.

After this limit has been reached, each additional unexcused absence will be marked as a failure in recitation, and one or more excused absences will subject the student to a special preliminary examination before he can proceed to his regular examination.

After a number of unexcused absences equal to three weeks of recitations in any subject, the student will not be allowed to continue his work in that subject, but must take it with the succeeding class.

No excuse will be granted except for protracted illness, or for reasons in every way exceptional.

This rule does not apply to examinations, or to recitations just before or after any vacation or recess, or to any class as a whole at any time, and is not to be interpreted as remitting any part of the total work of the term.

Chapel Absences.—Ten absences without excuse will be allowed each term. All absences after the first ten lower the standing at the rate of one unit for every two absences.

No absences will be excused except for protracted illness or for reasons in every way exceptional.

In the determination of a student's general standing, marks for chapel attendance are counted as the equivalent of a one hour per week recitation. They affect the granting of scholarships and the selection of honor men.

Conditions.—No student who has any conditions unsatisfied at the close of the first condition examination of the college year will be permitted to continue with his class without the express authorization of the Faculty. Conditions not removed by the end of the second examination held after their imposition, must be made up in class at the first opportunity, and this work shall take precedence of the regular work in case of conflict in the schedule. No Senior who has failed to make up all his back work by the end of the second term of Senior year can be recommended for a degree, except by special vote of the Faculty.

Examinations for the removal of conditions occur on the first Saturday of the Fall term, and on the first Saturday in December, March and May, as indicated in the College calendar.

Students who have been excused from any term examination may be examined later at the option of the instructor, but such examination cannot be postponed beyond the first condition examination. A failure to pass will be regarded as a failure at the original term examination.

A failure to report at any appointed examination will be regarded as a trial unless previously excused.

Irregular Students.—Irregular Students have no class relation, or class privilege; they are debarred from competition for prizes and from the attainment of special honors.

Changes of Course.—Students are not permitted to pass from one course to another, or to take any studies out of their regular order, without the specific authorization of the Faculty.

The evidence that a student's continuance in college is resulting in no advantage to himself, or in harm to others, will occasion his separation from the institution.

EXPENSES

Matriculation fee	\$ 5 00
Tuition, per term.....	25 00
Room rent, per term	6 00
For room occupied by one student.....	12 00
Incidental fee, for maintenance of public rooms, use of library, gymnasium, etc., per term.....	8 00
Chemical laboratory fees:	
Required course, per term.....	5 00
Elective courses, per term.....	10 00
Electrical engineering laboratory fee, per term	5 00
Biological laboratory fees:	
Elective courses, per term.....	5 00
Required courses, per term	2 00
Geological laboratory fee, per term.....	2 00
Physical laboratory fees:	
Elective courses, per term.....	5 00
Required courses, per term	2 00
Deposits to secure cost of material, etc:	
Chemical laboratory, required course.....	5 00
Chemical laboratory, elective courses.....	10 00
Biological laboratory, elective course.....	5 00
Graduation fee	8 00
Diploma fee	4 50

Students who take part of their Senior year's work at the Albany Medical College, as provided on page 38, are charged \$125 for the year's tuition, \$50 to be paid to the Treasurer of Union College, and \$75 to the Treasurer of the Albany Medical College.

All bills are to be paid within two weeks from the beginning of the term. No deduction is made from the usual charges on account of absence from college.

Students are not admitted to the laboratories until the required fees are paid at the Treasurer's office.

Unexpended balances of deposits are refunded at the end of the course.

The Faculty are not allowed to sign any degree, certificate or dismission for any student until his bills are paid or secured.

Board can be procured for \$3 to \$4 a week. The total expense of tuition, room, text-books, board, lights, washing, etc., during the three terms, is about \$280.

SCHOLARSHIPS

Funds given especially for this purpose enable the College to offer aid to a number of students each year as follows:

Tuition Scholarships

These cover charges for tuition (seventy-five dollars per year, room-rent not included) available for students in all courses, two-thirds of the whole number being open to applicants in the Classical and Latin-Scientific courses, and one-third to applicants in the Scientific and Engineering courses. These scholarships are awarded in the order of application.

Conditions

An applicant for a Tuition Scholarship must declare his purpose to remain in Union College until he has taken his degree and must furnish at least two certificates from reputable citizens not members of his own family stating their knowledge of his financial need as well as of his good character and studious habits.

The scholarship will be forfeited upon the failure of the student in any subject, or his failure to maintain an average grade of 80 per cent. in his studies, or upon sufficient evidence of moral delinquency.

Application blanks will be provided by the President or Dean upon request.

John David Wolfe Memorial Scholarships

The income of a Fund of Fifty Thousand Dollars established by the generosity of Miss Catharine Lorillard Wolfe, is designed to aid students from the Southern States.

The scholarships are governed by the conditions named above.

Levi Parsons Scholarships

A generous benefaction by the late Hon. Levi Parsons, of Gloversville, N. Y., maintains several scholarships in each class, yielding about one hundred and fifty dollars a year, each; this provides for tuition, room-rent and a money payment of \$20 per term.

Among applicants, preference is given

1st, to blood relatives of the Founder, bearing his name and living in the county of Fulton, Montgomery or Hamilton, in the State of New York, and especially to those bearing his name and living in Gloversville or Johnstown, Fulton county.

2d, to applicants living in the following places according to the following order :

1. The city of Gloversville, Fulton Co.
2. The city of Johnstown.
3. The township of Johnstown.
4. The county of Fulton.
5. The adjoining counties of Montgomery and Hamilton.
6. To blood relatives living in any other part of the United States.

Nomination to scholarships is made by the Board of Directors of the Gloversville Free Library; and the nominees must pass satisfactory examinations at the College. Applications are received by the Directors of the Gloversville Free Library, Gloversville, N. Y.

These scholarships are governed by the conditions named on page 94.

Union School Scholarships

These scholarships are given only to pupils of the Union School in Schenectady, who are sons or wards of residents. They must bring from the Principal a certificate of preparation for college and also one of abstinence, during the course, from tobacco and spirituous liquors, and they must sign a like pledge for their college course. They receive a remission of \$15 on the term-bill. In addition to maintaining their pledge, holders of Union School scholarships are subject to the general conditions named on page 94.

R. C. Alexander Prize Scholarship

The sum of four thousand dollars has been given in memory of the late Robert Carter Alexander, of the class of 1880, and a life trustee of the College, to be devoted to the establishment of a scholarship for the encouragement of classical studies.

The income of this fund, amounting to two hundred dollars per year, will be awarded as a prize scholarship upon the conditions named below. The first appointment to the scholarship will be made to a member of the class entering in the fall of 1902.

Conditions

1. Candidates must be students in the Classical course and of approved moral character.

2. They must be free from conditions, and must have obtained an average of at least eighty per cent. in the studies of the first two terms of the Freshman year.

3. They must pass successfully a special examination at the close of the Freshman year, in each of the following subjects: Latin, Greek, Mathematics, English Composition, and either French or German. These examinations will be based upon the work of the Freshman year.

4. The award will be made to the candidate obtaining the highest general average in these examinations and in all the previous work of his college course.

5. The Prize Scholarship will be forfeited upon evidence of moral delinquency or upon failure to maintain an average grade of 90 per cent. in the work of any subsequent term. The scholarship once lost cannot be regained, but will be awarded upon the above conditions to a student in the next entering class.

6. All questions pertaining to the administration of this scholarship will be determined by a committee composed of the President of the College, the Chairman of the Scholarship Committee of the Faculty, and a member of the Board of Trustees.

PRIZES

Blatchford Oratorical Medals

The Hon. Richard M. Blatchford, LL. D., of New York city, founded oratorical prizes, consisting of two gold medals of the value of the interest on \$1,000, which are given to the two members of the graduating class who deliver at Commencement the best orations; "regard being had alike to their elevated and classical character and to their graceful and effective delivery." These medals are awarded by a committee appointed by the Trustees and are presented at the close of the exercises.

Warner Prize

The Hon. Horatio G. Warner, LL. D., of Rochester, N. Y., founded an annual prize consisting of silver plate of the value of \$28 to be presented at Commencement to the "graduate of Union College, Classical course, who shall reach the highest standing in the performance of collegiate duties, and also sustain the best character for moral rectitude and deportment, without regard to religious practice or profession." The prize is awarded by the Faculty.

Ingham Prize

The Hon. Albert C. Ingham, LL. D., of Meridian, N. Y., founded an annual prize of the interest on \$1,000 (in the form of plate or medal or money, or both medal and money, as preferred), to be awarded at Commencement to that Senior connected with the College for not less than two years who shall offer the best essay on one of two assigned subjects in English Literature or History.

The essay must be type-written and must contain not less than 4,000 nor more than 4,500 words. Its signature (fictitious) and the writer's real name must be enclosed in a sealed envelope; the signature and the name of the prize being given on the outside. The essay with the note must be presented by noon on the fifteenth day of May.

Allen Essay Prizes

The Hon. William F. Allen, LL. D., of Oswego, N. Y., established a fund of \$1,000, the interest of which is devoted to prizes for the best three essays on any subject, submitted by members of the Senior class.

The essay must be type-written and must contain not less than 2,500 nor more than 3,000 words, and must be signed and presented (with note as in the case of the Ingham Essay) by noon on May 15th. The prizes are awarded at Commencement.

Prize for Extemporaneous Speaking

A prize of \$50 in money is awarded to that member of the College who shall deliver the best extemporaneous speech at a public competition to be held in Commencement week in each year. The award is made by a committee appointed by the donor, and is based on the following considerations: (1) The appropriateness and correctness of the subject matter; (2) the logical force of the argument; (3) the excellence of the style; (4) the grace and effectiveness of the delivery. All students in regular standing are eligible. The number of competitors is, however, limited to ten.

Clark Prizes

Prizes consisting of books are awarded at Commencement to the two members of the Junior class who offer the best essays on assigned subjects in English Literature.

The essay must be type-written and must contain not less than 2,500 nor more than 3,000 words, and must be signed and presented (with note, as in the case of the Ingham and the Allen Essays) by noon on May 15th.

Oratorical Prizes

Prizes are presented at Commencement to the two Juniors and the two Sophomores who deliver the orations best in composition and delivery, on the occasion of Prize Speaking in Commencement week. Four Juniors and four Sophomores are selected for this competition by a Committee of the Faculty, on the fifteenth of April. Candidates must be in full standing on appearance before the Committee.

Allison-Foote Prize

Founded by George F. Allison, of New York city, and Wallace T. Foote, of Port Henry, N. Y., for the encouragement of debate in the Literary Societies. The prize consists of \$100 in cash, and is to be awarded as the result of a public competition between representatives of the Adelphic and Philomathean Literary Societies. \$50 will be awarded to the society presenting the strongest argument. The remaining \$50 will be awarded to the debater who makes the best single speech, regardless of his society relations. Contestants must have engaged in at least ten debates in their respective societies during the college year immediately preceding. All further details are to be left to the determination of a committee consisting of the President and the Dean of the College, and the Professor of Rhetoric.

John K. Porter Memorial Scholarships

A fund given by Mrs. John K. Porter, in memory of her husband, is designed to assist students who, after graduating from college, pursue the study of law. The fund provides, at present, for three Scholarships of ninety dollars each. The awards will be made at Commencement to Seniors chosen by the Faculty.

Gilbert M. Speir Memorial Scholarship

A fund given by Mrs. Glover C. Arnold, in memory of her father, the late Judge Gilbert M. Speir, provides another Scholarship for students of law who go from Union College to the Albany Law School, another department of Union University.

The sum of ninety dollars will be awarded at Commencement to the Senior chosen by the Faculty, the choice being made on the basis of excellence in historical studies.

Applicants for Law School scholarships must register at the College office by May 1st of Senior year.

Daggett Prize

In 1899, Miss E. Josephine Daggett bequeathed to Union College the sum of \$1,000, the interest of which is devoted to a prize for conduct and character without respect to scholarship, to be given at Commencement to a Senior who shall have passed through a full course of four years at the college.

DEGREES AND HONORS

Degrees

The degrees of the college are conferred in harmony with a resolution of the Board of Trustees, which says: "The successful completion of the Classical course [Course 1, page 37] shall entitle the student to the degree of Bachelor of Arts; of the Latin-Scientific course [Course 2, page 37] to the degree of Bachelor of Philosophy; of the Scientific course [Course 3, page 37] to the degree of Bachelor of Science; of one of the Engineering courses [Courses 4, 5, 6, pages 37 and 38] to the degree of Bachelor of Engineering." The candidate for a degree must have entered college before the close of the first Senior term, must have paid all dues to the College Treasurer, and returned all books borrowed from the Library. He must also attend the conferring of Degrees, or be expressly excused therefrom.

Candidates for the degree of Master of Arts, or of Master of Science, are expected to submit evidence of having pursued a definite course of advanced studies during the three years immediately following the attainment of the Bachelor's degree. All applications should be accompanied by evidence of the graduate work accomplished and should be in the hands of the Dean by May 1st, for submission to the Faculty in time to provide for all necessary examinations before Commencement.

Honors

All Commencement prizes are limited to A. B., B. S., or Ph. B. students who have entered at or before the beginning of the Senior year, and who are in full standing at the close of the second term; and to Engineering students entered likewise and in full standing at the close of the second term, in both the Engineering course and the English department of the B. S. or Ph. B. course.

Commencement Appointments

These honors are assigned to ten Seniors on the basis of scholarship, as stated under Standing, page 89. Provisional appoint-

ments are made at the close of the second term Senior, and become final if those who receive them retain the same relative rank to the end of their course. Under present regulations, no other persons can become competitors for the Blatchford Oratorical Medals.

Seniors not in full standing at the close of the second term shall be considered ineligible to a Commencement appointment.

Places gained as the result of the third term's work, shall be on the excused list, unless ordered otherwise by special vote of the Faculty.

The Valedictory

This honor is awarded to the Senior of highest standing among the ten receiving Commencement appointments.

Special Honors

Special Honors are also given at graduation in each of the following subjects: Greek, Latin, English, French, German, Mathematics, Physics, Chemistry, Biology, Economics, History, Sociology and Philosophy. The work required in each case will be the equivalent of three terms of class-room work of two hours per week each, and will be outside of the prescribed or elective courses. The candidate for Special Honors must apply to the head of the department in which he proposes to take Honors, not later than the first Monday of the Spring term of the Junior year. He must attain in all the studies of the department in which he tries for Honors, a rank of not less than ninety per cent. of the maximum. The evidence that he has successfully completed the extra course prescribed for him must be submitted, not later than June first of the Senior year, to the Faculty, who shall decide in each case whether the work done is worthy of an Honor. The Honors attained are stated in the diploma, and the names of the students who take Honors are printed on the Commencement programme.

DEGREES CONFERRED

AT THE
ONE HUNDRED AND FIFTH ANNUAL
COMMENCEMENT

June 12, 1901

HONORARY

LL. D.

ALTON B. PARKER.....Albany, N. Y.
ALMON GUNNISONCanton, N. Y.

D. D.

J. HOWARD HOYT, '73.....New Canaan, Conn
DANIEL DULANY ADDISON, '83.....Brookline, Mass.

IN COURSE

A. M.

ADRIAN VAN SANTVOORD WALLACE.....Class of '78
WILLIAM H. HALL....." " '96
ARBA M. BLODGETT....." " '97
JAMES C. COOPER....." " '97
ROBERT S. HOXIE....." " '98

M. S.

WILLIAM L. FISHER.....Class of '98

CLASS OF 1900

A. B.

EMIL LEWIS WINTERBERG.....Tioga, Pa.

CLASS OF 1901

A. B.

HENRY SAMES BÄHLER.....Schenectady.
HARRY ALVIN BARRETT.....Troy.

HORATIO JONES BROWN.....	Schenectady.
JAMES WALTON CHEESBOROUGH.....	Biltmore, N. C.
JOSEPH HARVEY CLEMENTS, JR.....	Schenectady.
JOHN HAWLEY COOK.....	Albany.
ARTHUR SPENCER GOLDEN.....	Rensselaerville.
GARDINER KLINE	Amsterdam.
JOHN McNAB	Schenectady.
GEORGE LeROY SHELLEY.....	Amsterdam.
EARL BROWN SLACK.....	Groton.
CHARLES PORTER WAGONER.....	Albany.
THOMAS HERBERT WIGHT.....	Andes.

Ph. B.

JOHN LUDDEN	Troy.
PORTER LEE MERRIMAN.....	Albany.
WELLINGTON EUGENE VAN WORMER.....	Middleburgh.
LeROY J. WEED.....	Binghamton.

B. S.

JAMES WADSWORTH MILLER.....	Johnstown.
LEOPOLD MINKIN	Albany.
SAMUEL JUDSON NEFF.....	Port Leyden.
JOHN E. PARKER	Georgetown, S. C.

B. E.

ROY EDWIN ARGERSINGER.....	Johnstown.
CHARLES JOSEPH BENNETT.....	Amsterdam.
LEWIS S. BENTON.....	Phelps.
LEVI LEWIS SUMERISKI.....	Fairport.
RICHARD FRANCHOT WARNER.....	Rochester.

AWARDS**Valedictory**

HENRY SAMES BÄHLER.....Schenectady.

Commencement Orations

ARTHUR SPENCER GOLDEN.....Rensselaerville.

GARDINER KLINEAmsterdam.

JOHN McNABSchenectady.

GEORGE LEROY SHELLEY.....Amsterdam.

WELLINGTON EUGENE VAN WORMER.....Middleburgh.

CHARLES PORTER WAGONER.....Albany.

Engineering Theses

ROY EDWIN ARGERSINGER.....Johnstown.

CHARLES JOSEPH BENNETT.....Amsterdam.

RICHARD FRANCHOT WARNER.....Rochester.

Special Honors

In BiologyWELLINGTON EUGENE VAN WORMER.

In EnglishLEOPOLD MINKIN.

WELLINGTON EUGENE VAN WORMER.

EMIL LEWIS WINTERBERG (Class of 1900).

In GermanGEORGE LEROY SHELLEY.

In LatinGEORGE LEROY SHELLEY.

WELLINGTON EUGENE VAN WORMER.

Warner Prize

For Seniors

HENRY SAMES BÄHLER

Blatchford Oratorical Medals

For Seniors

1st. JOHN McNAB

2nd. ARTHUR SPENCER GOLDEN

Honorable Mention

WELLINGTON EUGENE VAN WORMER

Ingham Prize

For Seniors

GEORGE LEROY SHELLEY

Allen Essay Prizes

For Seniors

- 1st. ARTHUR SPENCER GOLDEN
2nd. WELLINGTON EUGENE VAN WORMER

Junior Oratorical Prizes

- 1st. NEILSON C. HANNAY
2nd. WILLIAM HOOPER ADAMS

Sophomore Oratorical Prizes

- 1st. LOUIS TIFFANY HUNT
2nd. JOSEPH GEORGE FENSTER

Allison-Foote Prizes

Won by the Adelpbic Society
and

LEOPOLD MINKIN

Class of 1901

John K. Porter Memorial Scholarships

LEOPOLD MINKIN

LEROY J. WEED

ARTHUR SPENCER GOLDEN

Gilbert M. Speir Memorial Scholarship

PORTER LEE MERRIMAN

Prize for Extemporaneous Speaking

LEOPOLD MINKIN

Daggett Prize

GEORGE LEROY SHELLEY

Holleran Prize

To the Senior Engineer of Highest Standing

CHARLES JOSEPH BENNETT

Phi Beta Kappa

from the Senior Class

HENRY SAMES BÄHLER

GARDINER KLINE

GEORGE LEROY SHELLEY

CHARLES PORTER WAGONER

Sigma Xi

from the Senior Class

WELLINGTON EUGENE VAN WORMER

SCHOOL OF CIVIL ENGINEERING

UNION COLLEGE

SCHENECTADY, N. Y.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
President.

WILLIAM WELLS, PH. D., LL. D.,
Professor of Modern Languages and Literature.

OLIN H. LANDRETH, A. M., C. E.,
Professor of Civil Engineering.

JAMES REAGLES TRUAX, A. M., PH. D.,
Professor of the English Language and Literature.

THOMAS WALLACE WRIGHT, A. M., PH. D.,
Professor of Mathematics.

BENJAMIN H. RIPTON, PH. D., LL. D., DEAN,
Professor of History and Sociology.

JAMES H. STOLLER, A. M., PH. D.,
Professor of Biology and Geology.

EDWARD EVERETT HALE, JR., PH. D.,
Professor of Rhetoric and Logic.

HOWARD OPDYKE, A. B.,*
Assistant Professor of Physics.

FREDERICK ROBERTSON JONES, A. M., PH. D.,
Assistant Professor of History and Sociology.

HORACE T. EDDY, B. E. E., E. E.,
Assistant Professor of Electrical Engineering.

FRANK BLAIR WILLIAMS, C. E., M. S., PH. D.,
Assistant Professor of Engineering.

*Absent on leave.

Union College

RICHARD S. CURTISS, PH. D.,
Assistant Professor of Chemistry.

FREDERICK H. WILKENS, Ph. D.,
Assistant Professor of Modern Languages.

JOHN L. MARCH, A. M.,
Instructor in Modern Languages.

HERBERT L. TOWNE, M. D.,
Instructor in Physical Culture.

FREDERICK EDWARDS, C. E.,
Instructor in Drafting, Surveying and Mathematics.

EDWIN B. WHEELER, B. S.,
Instructor in Physics.

SCHOOL OF CIVIL ENGINEERING

This school was founded in 1845. Its object is to give its students such instruction in the theory and practice of Civil Engineering as will qualify them for immediate usefulness in the field and office in a subordinate capacity, and at the same time fit them to fill satisfactorily the higher positions in the profession, after a moderate amount of experience in the routine of practice. The course of instruction aims to effect this by constant exercise in mechanical drafting, instrumental field-work and numerical calculations, combined with lectures and the study of text-books.

The connection of the Engineering School with the College affords its students peculiar advantages for study in the various departments of the latter, to all of which they are admitted without extra charge.

The location of Schenectady is most favorable for an Engineering School. The city is on the Mohawk river and is intersected by several railroads and the Erie Canal. These present many bridges and other works interesting to the Engineering student. There are also extensive Locomotive Works, Electrical Works, Machine Shops and Foundries, all of which afford special advantages for examination and study.

For information regarding requirements for admission, expenses, and terms and vacations, see pages 39 to 46, 92 and 5, 6.

Degrees.—Three courses in Engineering are offered, viz: a general Civil Engineering course which is intended to give the basis of an Engineering education, including the fundamental principles of all special branches of the profession, a knowledge of both French and German, and a course in English; a special course in Sanitary Engineering which differs from the general course in substituting special work in Sanitary Engineering for some of the general Engineering studies; and a course in Electri-

cal Engineering. The Degree of Bachelor of Engineering is given for the successful completion of any one of these courses. These three courses are alike during the first three years but widely different during the Senior year. This permits a student to defer the selection of his particular course until two or three years of study have made him somewhat familiar with the characteristics of the several courses and with his own preference and capabilities. It is intended that the Diplomas in Engineering shall be a guaranty of more than average ability and industry. Students not graduating receive certificates stating what they have done, both as to quantity and quality. Candidates for graduation must have presented a thesis completed according to the regulations of the School, must also have paid all dues at the College Treasury, must have returned all books taken from the College Library, and must be present at the conferring of degrees, unless expressly excused.

Architectural Students will find a large part of the general course adapted to their requirements; particularly the Drafting, Mensuration, Stereotomy, Strength of Materials and the study of Difficult Foundations, Building Construction, Heating and Ventilation, etc.

ADMISSION

General Conditions for Admission

[See page 39.]

Requirements for Admission

Candidates for admission to the Freshman class in any of the Engineering courses, are required to pass satisfactory examinations in, or present approved certificates covering the following subjects:

English Literature, Arithmetic, Algebra, Plane and Solid Geometry, Plane Trigonometry, Physics, Modern Geography, History of the United States, Physiology, and an amount of German equivalent to one year's study, as given in detail on pages 40-44.

COURSES OF STUDY

Mathematics

The studies of this department include the following: Algebra (completed), Spherical Trigonometry, Analytic Geometry, Descriptive Geometry, Differential and Integral Calculus. Optional courses in Higher Mathematics are also offered. See also pages 57, 58.

Mechanics and Physics

The following are the subjects included in the course:

In Analytical Mechanics.—Statics, Dynamics, Hydrostatics, Hydrodynamics, Pneumatics.

In Physics.—Optics, Acoustics, Heat, Electricity, Magnetism and Galvanism. Physical Laboratory practice is required of all engineering students. See also pages 58, 59.

Astronomy

The instruction in Astronomy includes Spherical Astronomy, Theory of Astronomical Instruments, and Physical Astronomy. The students are also given a practical course in Astronomical Surveying and Location.

Biology

Physiology is a required study in each of the three Engineering Courses. Structural Botany is required in the General and Sanitary Courses, and Bacteriology is required in the Sanitary Course. Structural Botany includes the microscopical study of the vegetable cell, the tissues and the tissue-systems of the higher plants, with special reference to the uses of woods in the constructive arts. In Bacteriology some of the common bacteria of water, air and soil are studied according to the methods of modern bacteriological research. The accompanying lectures treat of bacteria in regard to their

place and role in nature, their relations to sanitary science, etc. In this work the student uses the microscope, prepares sections, etc. See also pages 61, 62.

Geology

The required work of the first term of the Junior year is a course in Economic Geology, which includes the explanation of the general principles of geology, and a description of the occurrence and distribution of the mineral deposits and materials for construction in the United States.

Chemistry

General Chemistry is taught by recitations, lectures and laboratory work throughout the Sophomore year, and laboratory work in qualitative analysis is continued through the first term of the Junior year.

Sanitary Engineering students, in addition to the above, take Chemical Laboratory work during the first and second terms of the Senior year.

Modern Languages

All Engineering students are required to take one year of Elementary French and one year of Advanced German.

See pages 49, 50 for a description of these courses.

English Literature and Rhetoric

The instruction in English is eminently practical and has special reference to the clear and forcible presentation of a subject by a student. The full course in English Literature is laid down on pages 50 to 52. The full course in Rhetoric is to be found on pages 52, 53. The course required of Engineering students is somewhat abridged so as to embrace those portions deemed most important for their special needs.

In the Senior year one of the required essays of each term will be upon a technical subject, prepared under the direction of the Professor of Civil Engineering, the object being to give the Engineering student practice in the preparation of reports upon Engineering subjects.

Engineering, General Course

The subjects of this course are so arranged as to harmonize with the seasons of the year suitable to field or other work. The course includes the following subjects:

Drawing and Descriptive Geometry.—The instruction in this department extends throughout the entire course. In the first term Freshman the student is instructed in free-hand drawing from the flat and from the object, and in free-hand lettering. In the second term he is instructed in the use of drawing instruments and the construction of geometrical problems, and lettering. In the third term Freshman, and first term Sophomore he obtains practice in plotting the surveys made in the field. Further instruction in Topographical Drawing is given in the first term Sophomore. Descriptive Geometry is begun in the second term Sophomore, and in addition to thorough instruction in the theory, an effort is made to illustrate by problems some of the most common applications in practice. Schroeder's and the Olivier models and the models of intersections of the Paris Polytechnic School are freely used. The collection of models is described on pages 122, 123. In the third term instruction is given in Shades, Shadows and Perspective and the various projections. In the Junior year the work in drawing includes model and machine drawing and the solution of problems in Graphical Analysis. In the Senior year is given a thorough course in the designing of Engineering structures, including detail drawings of constructions of wood and iron; this is followed by a course in Stereotomy, with drawings from the Stereotomy models of the Paris Polytechnic School. Practice in blue printing is made an important part of these courses.

Surveying.—The third term Freshman includes instruction and practice in the elementary operations in the field with chain and tape, compass, level and rod and transit. Whenever possible the class is exercised in actual work in laying out lots, surveying lands and computing areas, establishing grades for streets and roads and determining differences in elevation. In the first term Sophomore the subject of Topographical Surveying is taken up and instruction and practice are given in the various methods and instruments. Railroad Surveying is treated in the third term Junior and the students

are given exercise in the principal field operations on railroad surveys, office and field location and staking out for construction. The subject of railroad construction and equipment is not treated until the first term of the Senior year.

Geodesy and Astronomical Surveying in the third term of the Senior year comprise a discussion of the figure of the earth; triangulation system; base lines; observations; reductions and adjustment, determination of time, latitude and azimuth; transformation of co-ordinates, map projection.

As a preliminary to instruction in each branch of surveying, a thorough study of the instruments employed is taken up, treating their geometrical, optical and mechanical relations; their adjustments, use and the determination of their instrumental constants, errors and limits of precision.

Office computations, plotting and mapping are made adjuncts of field surveys.

Field practice forms an important part of all of the courses in surveying, the classes being divided into sections, and directed by the instructors.

When feasible, about three weeks of uninterrupted field and office practice will be given in the Junior or Senior year.

Applied Mechanics and Materials.—Applied Mechanics is commenced in the first term of the Junior year, and comprises the extension of Analytic Mechanics and the study of Graphical Analysis, and their applications to engineering problems, operations and constructions, particularly the treatment of stresses, strains, deflections and deformations in elastic materials and structures due to extraneous forces. Closely allied to this are the studies of Hydraulics and Masonry, the former comprising the study of flow through orifices, weirs, pipes and channels, and the development of water power; the latter comprising the mechanics of foundations, piers, abutments, arches, retaining walls, dams, etc.

In conjunction with the above subjects is given the study of the production, preparation, strength and physical properties of the various engineering materials, including timber, stones, mortar, cement, cast iron, wrought iron and structural steel. Practice in Engineering Laboratory is an important adjunct to this study. This entire division, properly correlated, becomes the foundation of all rational engineering design and construction.

Engineering Design.—The courses in Applied Mechanics and materials prepare the student to undertake the study of Engineering Design proper, which is done throughout the Senior year, as an important feature of the work in bridges, railroads, water-works, architectural engineering, etc. The exercises in this line of work are, as far as possible, assigned from professional practice, and the student is expected to carry out, from assigned data and conditions, the preliminary study, determinations of stresses, types, dimensions and details, and to turn in the results in the form of working drawings, diagrams and memoirs. There is a large collection of drawings of representative engineering structures in the department from which students can obtain correct ideas of modern practice in the designing of details and the methods of the various large companies engaged in this branch of construction.

Water.—The subject of water supply is considered in all its aspects. In the first term Junior is given a laboratory course in Chemistry, followed in the second term by a course in water analysis, accompanied by work in analysis of soil and air. In the third term Junior is given an elementary course in Hydraulics, followed in the Senior year by a fuller development of the principles as applied to the supply of water to cities and villages. This is accompanied by a study of the sanitary aspects of the subject of water supply and preservation of the same from contamination. Some study is also made of pumping engines.

Highways.—The study of highways comprises a consideration of the highway as an element in the transportation and social system of the State, the principles of its advantageous location and proper construction; a study of the various modes of construction and the materials employed, its proper maintenance; systems of highway administration.

Streets and Pavements.—A study of the methods of laying out and grading streets and pavements, and of the various paving methods and materials and their treatment, with special reference to their economic and sanitary aspects.

Motors and Motive Power.—Following the work in Thermodynamics and Hydraulics of the third term of the Junior year, an outline course in motors and motive power is given in the first and second terms, Senior year, comprising a study of the sources of demand and supply of power, steam boilers, steam engines, gas engines, water wheels, electric motors, etc.

Engineering Law and Procedure.—Two hours per week, during the last term Senior year, are assigned to the study of the principles and procedure of contracts, agency, corporations, commercial and financial transactions, laws relating to land boundaries and titles, water courses, surveys, mining claims, etc. During the first and second terms of the Freshman year and the third term of the Senior year, a series of lectures is given on topics pertaining to the training and the qualifications of engineers and to engineering practice.

Sanitary Engineering Course

The course in Sanitary Engineering differs from the general Engineering course, by omitting the Astronomical Surveying, Geodesy and Railroad Construction, and substituting therefor Heating and Ventilation, House Drainage and Plumbing, Sewerage and Sewage Disposal, Sanitary Biology, Sanitary Codes and Laws, and an increase in the amount of Chemistry and Chemical Laboratory work.

Sanitary Condition of Houses.—In the first term Senior, will be given courses in Heating and Ventilation and in House Draining and Plumbing. The latter course will have special attention given to it and methods of water supply and of the removal of house wastes of buildings in all locations, from the isolated country house to that in a thoroughly drained city, will be considered.

Sewerage and Drainage.—The study of systems of sewerage and drainage and sewage disposal will extend through the last term Senior. The comparative advantages of various systems will be shown and the details of construction and maintenance will receive careful attention.

A course of lectures in the third term Senior will present the

basis for the preparation of sanitary codes and the principles upon which laws touching the subject of the public health are based.

Electrical Engineering Course

This course was first offered and students admitted to the lower classes in the fall of 1895. The course is now fully arranged and valuable facilities have been secured for it. Running parallel with the two other courses through the third year, it substitutes for Geodesy, Water Supply Engineering, Sewerage, Railroad Construction, Heating and Ventilation, Bacteriology and other allied work, in the General and Sanitary Engineering courses, an equivalent amount of work in Mathematical Theory of Electricity (continued), Electrical Transmission of Energy, Design of Dynamos and Direct Current Apparatus, Theory of Alternating Currents and Design of Alternating Current Machinery, and Electrical Laboratory work.

In addition to the laboratory equipment in electro-physics, the electrical laboratory equipped with direct and alternating current apparatus affords excellent opportunity for experimental work.

Through the active interest which the General Electric Company of Schenectady takes in technical education, an arrangement has been effected between the college authorities and the officials of the company, by which students in the Junior and Senior classes are admitted to the company's works at regular scheduled times under the direction of their instructor, with the privilege and opportunity of studying and inspecting the plant and operations, and of being regularly instructed therein by their instructor. This work will be systematically arranged and is to be given simultaneously with the corresponding class and laboratory work to which it will form an important and valuable adjunct.

This privilege of becoming familiar with the shops and machinery of the largest electrical manufacturing company in existence and the encouragement that this company offers to technical education add much to the value of the course here offered.

Voluntary Studies

Any of the studies of the Classical or of the Scientific course

of the college may be taken by Engineering students without extra charge.

Final Examinations

During the Senior year a series of Final Examinations will be held covering the more important subjects of the entire course. The list of subjects in which examinations are to be given during any term will be determined by the Faculty.

Thesis

Each candidate for graduation is required to present on or before the first Wednesday in June of his graduation year, a satisfactory thesis on a subject that has been approved by the Professor of Civil Engineering. This thesis must be either a design for some engineering structure, process or operation; or an independent investigation of some principle, problem, or matter of engineering importance. Reviews of existing structures, plants or processes, unless of special educational value, will not be approved as subjects. This thesis is to be in a form prescribed at the time of approval of the subject, and is to be bound for deposit in the library of the Engineering School, and must be presented in this shape on or before the stipulated date. The subjects, with outlines of the proposed treatment, must be submitted for approval not later than January 1st of each year and the work on the thesis must be presented for the inspection and criticism of the Professor of Civil Engineering at intervals during its progress.

Instruments and Apparatus

This department is supplied with field instruments of the best description, comprising a large Theodolite suitable for refined geodetic operations, Transits, Surveyor's Compasses, Prismatic Compasses, Burneir's Compass, Solar Compass, Y Levels, the Levels of Troughton, Egault, Lenoir and Burneir; Plane Table, Sextant, Octant, Mountain Barometers, Aneroid Barometer and a Marine Chronometer.

The extensive private collection of models and instruments belonging to the late Professor Gillespie has been purchased for the Engineering School.

The collection of models in Descriptive Geometry and Stereotomy is very complete. The following are some of the most important:

The Olivier Collection.—This consists of about fifty models representing the most important and complicated ruled surfaces of Descriptive Geometry, particularly warped or twisted surfaces. Their directrices are represented by brass bars, straight or curved, to which are attached silk threads representing the elements or successive positions of the generatrices of the surfaces. Each of these threads has a weight suspended by it so as always to make it a straight line. These weights are contained in boxes sustaining the directrices and their standards. The bars are moveable in various directions, carrying with them the threads still stretched straight by the weights in every position they may take; so that the forms and natures of the surface which they constitute are continually changing, while they always remain ruled surfaces. In this way a plane is transformed into a paraboloid, a cylinder into a hyperboloid, etc.

These models were invented by the late Théodore Olivier, while Professor of Descriptive Geometry at the Conservatoire des Arts et Métiers, in Paris. One set of them is now deposited there, and a second is in the Conservatory of Madrid. Copies of some of them are to be found in most of the polytechnic schools of Germany. The Union College set is the original collection of the inventor, having been made in part by his own hands, and, after his death in 1853, retained by his widow till bought of her by Professor Gillespie, in 1855. It is more complete than that in the Paris Conservatoire. It may be worth noticing that the silvered plates on the boxes, reading "*Inventé par Théodore Olivier*," etc., were added by Madame Olivier, at her own expense, after the purchase, as a tribute to the memory of her husband, her own words being, "*Je tenais à ce que chaque instrument portât le nom du savant dont la réputation passera à la postérité.*"

Professor Bardin's (Paris) plaster models (seventy) of the INTERSECTIONS of prisms, pyramids, cylinders, cones, etc.

Schroeder's (Darmstadt) models (twenty) of elementary

DESCRIPTIVE GEOMETRY. The planes of projection are in wood, and the lines and surfaces in metal; models illustrating Shades and Shadows.

Stone Cutting Models (twenty) in plaster, selected from those of L'Ecole Polytechnique of Paris,

Professor Bardin's models (ten) in plaster, of **OBLIQUE ARCHES.**

Groined and cloistered arch models (ten) in wood and plaster.

Models of structures in stone, consisting of bridges, culverts, etc.

Winding-stair models in wood and plaster. Full sized models of voussoirs and skew-backs of an oblique arch.

Models in Topography.—French and German plaster models, giving all the different forms of ground, accompanied by topographical drawings, showing how to represent these forms by contour lines, hatchings, and shades from vertical and oblique light; models and maps in colored topography; a large model of Mount Cenis Pass, showing the wagon road and contour lines.

Architecture.—Models of the five orders of Architecture from L'Ecole des Beaux Arts, Paris; portals; stairs; roofs; walls; buttresses; domes, etc.

Engineering.—Schroeder's models of joints, brick bonds, etc.; spur wheels; bevel wheels; cranes; pile drivers; various forms of water-wheels; pumps; cylinders; valves; eccentrics, etc.; steam engines.

Casts of St. Venant's models showing the changes of form in bodies subjected to flexure. Full sized model of the liquid vein measured by Poncelet and Lesbros.

Models of bridges of various systems, comprising truss, suspension, tubular and arch bridges; Doyne's Dynamometer Bridge Models showing, by means of dynamometer, strains at different points; models of roof trusses, arranged for using the dynamometer to show the different stresses.

Models of fortifications, illustrating Vauban's system; shot, shell, etc.

Models of culverts, piers, abutments, culvert heads, wing walls, rail sections, etc.

Physical Apparatus

(See page 58.)

Collections in the Department of Chemistry

In Mineralogy.—The Wheatley collection contains nearly 4,000 specimens of minerals, the result of the labors of Charles M. Wheatley. All of these have been labeled according to the nomenclature and order adopted by Dana. They are without exception open at all times to the students. They furnish an admirable means of practical illustration in Mineralogy. Among the rare and valuable specimens are those of Anglesite, Cerusite, Mimetite and Calcuprite, which in American specimens are equaled only by those in the British Museum. There are many fine specimens representing the noble metals from all parts of the world. There are few known species of minerals of which the collection does not contain some specimens.

In addition to this there is a large series of unlabeled specimens for crystallographic and blow-pipe examination.

In Metallurgy.—The college possesses a suite of ores of the useful metals, comprising over 1,000 specimens. These have been arranged to illustrate their mode of occurrence and geographical distribution. In addition are the fluxes, fuels, etc., used in obtaining the metals from the ores, together with the slags and metals themselves in various forms. There is a large number of models and drawings of stacks, furnaces, etc.; also suites of specimens of wood, charcoal, mineral coal, peat, etc., for physical inspection; also specimens of most of the useful alloys.

In Industrial Chemistry.—A large number of specimens of the materials used in the manufacture of the mineral and of some of the organic acids; the crude products themselves and the materials used in the manufacture of the alkalis, soaps, matches, black lead, candles, petroleum products; linseed, olive, castor, cottonseed and other oils; paper, porcelain, glass, fire and building brick, mortar and cements, beet and cane sugars, white lead and other paints, etc., etc.

Maps, Drawings, Etc.

This collection embraces a large number of maps, plates, profiles, topographical drawings and spherical projections; about fifty thousand engravings, lithographs, photographs, and detail drawings of engineering and architectural structures; working drawings of machines, bridges, buildings, etc.

Library

The students have the use of the College and Society Libraries. The former contains the Engineering and Scientific Library of the late Professor Gillespie. See page 65.

Physiology and Physical Education

(See page 63.)

For catalogue or special information, address
OLIN H. LANDRETH, Schenectady, N. Y.

ORDER OF STUDIES

Courses Leading to Degree of B. E.

[The Freshman, Sophomore and Junior years are alike for the General, the Sanitary and the Electrical Engineering Course.]

Freshman Year

First Term

Hours per week.

- 3 French.
- 3 German.
- 3 Freehand Drawing.
- 5 Algebra.
- 2 Physiology.
- 1 Gymnastics.
- Lectures.

Second Term

- 3 French.
- 3 German.
- 4 Spherical Trigonometry and Analytic Geometry.
- 2 Mensuration.
- 3 Mechanical Drawing.
- 2 Rhetoric.
- 1 Gymnastics.
- Lectures.

Third Term

- 3 French.
- 3 German.
- 3 Rhetoric.
- 4 Analytic Geometry.
- 4 Surveying and Plotting.
- Summer Vacation Work.

Sophomore Year

[Alike for all Engineering Courses.]

First Term

Hours per week.

- 5 Calculus.
- 5 Topographical Surveying.
- 3 Chemistry.
- 3 English Literature.
- 1 Physiology of Exercise.

Second Term

- 3 Calculus.
- 5 Mechanics.
- 2 English Literature.
- 3 Chemistry.
- 3 Descriptive Geometry.
- 1 Physiology of Exercise.
- One Essay and one Oration.

Third Term

- 5 Physics and Physical Laboratory.
- 3 Calculus.
- 3 Descriptive Geometry; Shades and Shadows.
- 3 Chemistry.
- City Surveying.
- 1 Physiology of Exercise.
- One Essay and one Oration.
- Summer Vacation Work.

Junior Year

[Alike for all Engineering Courses.]

First Term

Hours per week.

- 5 Physics and Physical Laboratory.
- 4 Applied Mechanics.
- 3 Chemical Laboratory.
- 2 American History.
- 3 Highways.
- Rhetorical Exercises.

Second Term

- 5 Mechanics of Materials and Engineering Laboratory.
- 2 American History.
- 3 Kinematics and Machine Drawing.
- 2 Pavements.
- 1 Natural Perspective.
- 3 Astronomy.
- Rhetorical Exercises.

Third Term

- 4 Stresses in Structures and Graphical Analysis.
- 3 Hydraulics.
- 2 Thermodynamics.
- 3 Route Surveying.
- 3 Mathematical Theory of Electricity.
- 2 American History.
- Rhetorical Exercises.
- Inspection Trips.
- Summer Vacation Work.

GENERAL COURSE

Senior Year

First Term

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 2 Stereotomy.
- 2 Outlines of Architecture.
- 2 Railroad Construction.
- 2 Economic Geology.
- One Literary Essay.
- One Technical Essay.
- Inspection Trips.

Second Term

- 3 Motors and Motive Power.
- 4 Engineering Design and Construction.
- 3 Water Supply Engineering.
- 2 Building Construction.
- 2 Method of Least Squares.
- 3 Sewerage.
- One Technical Essay.
- One Literary Essay.
- Inspection Trips.

Third Term

- 5 Engineering Design and Construction.
- 2 Engineering Law and Procedure.
- 4 Geodesy and Field Astronomy.
- 4 Electives.

SANITARY COURSE**Senior Year****First Term**

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 3 Heating and Ventilation.
- 3 Chemical Laboratory.
- 2 Economic Geology.
- One Literary Essay.
- One Technical Essay.
- Inspection Trips.

Second Term

- 3 Motors and Motive Power.
- 4 Engineering Design and Construction.
- 3 Water Supply Engineering.
- 2 Chemical Laboratory.
- 3 Sewerage.
- 2 Structural Botany.
- One Literary Essay.
- One Technical Essay.
- Inspection Trips.

Third Term

- 5 Engineering Design and Construction.
- 2 Sewage Disposal.
- 2 Engineering Law and Procedure.
- 3 Bacteriology.
- 1 Sanitary Codes and Laws.
- 1 House Drainage and Plumbing.
- 2 Electives.
- 1 Thesis.

ELECTRICAL COURSE

Senior Year

First Term

Hours per week.

- 2 Motors and Motive Power.
- 4 Engineering Stresses.
- 3 Economics.
- 4 Mathematical Theory of Electricity.
- 4 Theory of Direct Current Machinery.
One Literary Essay.
One Technical Essay.
Inspection Trips.

Second Term

- 3 Motors and Motive Power.
- 2 Electrical Transmission of Energy.
- 2 Alternating Currents.
- 2 Engineering Design.
- 4 Dynamo Designing.
- 4 Electrical Laboratory.
One Literary Essay.
One Technical Essay.
Inspection Trips.

Third Term

- 3 Alternating Currents.
- 3 Alternating Current Machine Designing.
- 2 Electrical Transmission of Energy.
- 2 Electric Railways and Lighting.
- 2 Engineering Law and Procedure.
- 3 Electives.
- 1 Thesis.

ALBANY MEDICAL COLLEGE

MEDICAL DEPARTMENT OF

UNION UNIVERSITY

SEVENTY-FIRST SESSION

ALBANY MEDICAL COLLEGE

The Medical College building, situated on Eagle street, Albany, is well appointed in its lecture rooms, laboratories, dissecting room and museums. The chemical laboratory is fitted with every requisite for the illustration of the lectures and the use of students, while the new Bender Hygienic Laboratory furnishes unexcelled facilities for instruction in histology, embryology, pathology, bacteriology and clinical microscopy.

The location of the college is such as to afford superior advantages to the student. The hospitals and dispensaries furnish an abundant supply of material for the illustration of clinical medicine and surgery, while the museums are especially rich in anatomical and pathological preparations. They contain the valuable morbid specimens accumulated by the late Drs. March, Armsby, McNaughton and Haskins, and the pathological specimens, the Sydenham Society plates on diseases of the skin and Böck's anatomical models added by Dr. Vander Veer.

With the session of 1897-'98 a four year course was inaugurated and a four year course is now required by law in this state. The curriculum embraces lectures by professors and lecturers; recitations conducted mainly by instructors, and practical demonstrations, clinical teaching and laboratory work, in which the professors in the different departments are assisted by clinical assistants and demonstrators.

The Albany Hospital, St. Peter's Hospital, Child's Hospital, Albany Hospital for Incurables, County Hospital, South End Dispensary, Eye and Ear Infirmary, and dispensaries connected with each are, by the regulations of their governing boards, made available for clinical purposes to the students.

Appointments to positions on the house staffs of the Albany Hospital, and other hospitals in Albany and neighboring places, are annually made and are competed for by the members of the graduating class.

TRUSTEES

WILLIAM L. LEARNED,
President.

SIMON W. ROSENDALE,
Vice-President.

JOHN H. JACKSON,
Treasurer.

CHARLES F. VAN BENTHUYSEN,
Secretary

ERASTUS D. PALMER,
CLARENCE RATHBONE,
JOHN M. CRAPO,
JAMES D. WASSON,
OSGOOD H. SHEPARD,
CHARLES L. PRUYN,
HENRY T. MARTIN
AMASA J. PARKER,
J. TOWNSEND LANSING,

ANDREW V. V. RAYMOND,
JESSE W. POTTS,
EDWARD A. DURANT,
CLIFFORD D. GREGORY,
CHARLES TRACEY,
WILLIAM J. WALKER,
ALDEN CHESTER,
WILLIAM H. WEAVER,
EDWARD BOWDITCH.

MAYOR OF ALBANY,
RECORDER OF ALBANY, } *Ex-officio.*

CATALOGUES are sent with care, and graduates of the college changing their post-office address, or not receiving them, will please notify

WILLIS G. TUCKER, M. D., *Registrar*,
Albany Medical College,
Albany, N. Y.

FACULTY

ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,
Chancellor of the University.

ALBERT VANDER VEER, M. D., PH. D., DEAN,
Professor of Didactic, Abdominal and Clinical Surgery.

JOHN MILTON BIGELOW, M. D., PH. D.,
Emeritus Professor of Materia Medica, Therapeutics and Diseases of the Throat and Nose.

SAMUEL BALDWIN WARD, M. D., PH. D.,
Professor of Theory and Practice of Medicine and of Hygiene.

JAMES PETER BOYD, M. D.,
Professor of Obstetrics, Gynecology and Diseases of Children.

WILLIS GAYLORD TUCKER, M. D., PH. D., REGISTRAR,
Professor of Chemistry and Toxicology.

WILLIAM HAILES, M. D.,
Anthony Professor of Pathological Anatomy, Embryology, Histology and Fractures and Dislocations.

CYRUS STRONG MERRILL, M. D.,
Professor of Ophthalmology and Otology.

FREDERIC COLTON CURTIS, M. D.,
Professor of Dermatology.

HENRY HUN, M. D.,
Professor of Diseases of the Nervous System.

SAMUEL ROSEBURGH MORROW, M. D.,
Professor of Anatomy and of Orthopedic and Operative Surgery.

Albany Medical College

HERMON CAMP GORDINIER, M. D.,
Professor of Physiology.

HOWARD VAN RENSSELAER, M. D.,
Professor of Materia Medica and Therapeutics, and Adjunct
Professor of Theory and Practice of Medicine.

Adjunct Professors

JOSEPH DAVIS CRAIG, M. D.,
Anatomy. Demonstrator of Anatomy and Curator of the
Museum.

WILLIS GOSS MACDONALD, M. D.
Surgery.

GEORGE BLUMER, M. D.,
Histology, Pathology and Bacteriology. Director of Bender
Hygienic Laboratory.

ANDREW MACFARLANE, M. D.
Medical Jurisprudence and Physical Diagnosis.

Clinical Professors

HERMAN BENDELL, M. D.,
Otology.

THEODORE F. C. VAN ALLEN, M. D.,
Ophthalmology.

CLINTON BRADFORD HERRICK, M. D.,
Railway Surgery.

ARTHUR GUERNSEY ROOT, M. D.,
Diseases of the Throat and Nose.

LEO HAENDEL NEUMAN, M. D.,
Theory and Practice of Medicine and Gastro-Enteric Diseases.

JESSE MONTGOMERY MOSHER, M. D.,
Insanity, Neurology and Electro-Therapeutics.

Lecturers

WILLIAM OLIN STILLMAN, M. D.,
History of Medicine.

HARRY JUDSON LIPES, M. D.,
Obstetrics.

CHARLES HARPER RICHARDSON, M. D.,
Minor Surgery.

ARTHUR WELLS ELTING, M. D.,
Surgical Pathology.

GEORGE EMORY LOCHNER, M. D.,
Gynecology.

ARTHUR TURNER LAIRD, M. D.,
Clinical Microscopy.

THEODORE JAMES BRADLEY, PH. G.,
Inorganic Chemistry.

Instructors

CHARLES HENRY MOORE, M. D.,
Ophthalmology and Otology.

THOMAS WILLIAMS JENKINS, M. D.,
Histology and Pathological Anatomy.

THOMAS ADDIS RYAN, M. D.,
Surgery.

WILFRED SILVESTER HALE, M. D.,
Anatomy and Assistant Demonstrator of Anatomy.

CLEMENT FRANK THEISEN, M. D.,
Throat and Nose.

JAMES MANNING MOORE, M. D.,
Orthopedics.

Albany Medical College

SPENCER LYMAN DAWES, M. D.,
Theory and Practice of Medicine and Therapeutics.

ARTHUR SAUTTER, M. D.,
Dermatology.

JAMES WESLEY WILTSE, M. D.,
Materia Medica and Therapeutics

HENRY LARNED KEITH SHAW, M. D.,
Diseases of Children.

ALVAH HARRY TRAVER, M. D.,
Surgery.

EDGAR ROSCOE STILLMAN, M. D.,
Physiology.

EDGAR ALBERT VANDER VEER, M. D.,
Surgery.

GEORGE LINIUS STREETER, M. D.,
Clinical Medicine and Physiology.

JAMES FRANCIS ROONEY, M. D.,
Anatomy and Assistant Demonstrator of Anatomy.

EUGENE EUNSON HINMAN, M. D.,
Anatomy and Assistant Demonstrator of Anatomy.

EDWARD WATERBURY BECKER, M. D.,
Physiology.

Clinical Assistants

WILLIAM HENRY GEORGE, M. D.,
MICHAEL DANIEL STEVENSON, M. D.,
WASHINGTON IRVING GOEWY, M. D.,
ROBERT HILL TEDFORD, JR., M. D.,
ELIJAH HUDSON RIDER, M. D.,
ADAM JAMES BLESSING, M. D.

Students, 1901-02

Fourth Year

LaSALLE ARCHAMBAULT	Cohoes
THOMAS CARNEY	Schenectady
ELWIN CHAMPLIN	Griffin Corners
KENT STANLEY CLARK	Oneonta
JOHN BOWMAN CONGDON	Albany
HUGH MICHAEL COX	Port Jervis
EDWARD ARTHUR DAWSON	Brooklyn
AUGUST JOHN FREUTEL	New York
JOHN HENRY GUTMANN, B. S.	Albany
STILLMAN SMITH HAM, PH. B.	Schenectady
DANIEL JAMES HOYT, A. B.	Amsterdam
EARL HOLCOMB JACKSON	Jordan
ROBERT JOHNSTONE KAHM	Philadelphia, Pa.
FREDERICK HUBERT LADD	Sackett's Harbor
FRED E. LETTICE	Albany
MOSES JOSEPH MANDELBAUM	Albany
JOSEPH MARK, PH. B.	Amsterdam
EDWIN ALONZO MASON	Berlin
HENRY ERLE MERENESS, JR.	Albany
WILLIS EDGAR MERRIMAN, JR., PH. B.	Albany
FREDERICK CORNWALL REED	Cambridge
FRANK MALCOLM SULZMAN	Waterford
CLIFFORD WALTER SUMNER	Pownal, Vt.
JUNIUS PARKER TALMADGE	Westfield, Mass.
ELBERT GOODMAN VAN ORSDELL	Hudson
CHARLES P. WAGNER,	Fort Plain
GEORGE VAN VORIS WARNER	New York
RICHARD ALLEN WOODRUFF, M. D.	Philmont

Third Year

SAMUEL HALCOM BEHREND BASCH	Rondout
HOWARD ARTHUR BASSETT	Martinsville
FREDERICK ERNEST BOLT	Masonville

DONALD BOYD, A. B.	Fonda
J. HOWARD BRANAN	Albany
JOHN EDWARD CANFIELD	Johnstown
HENRY MILLIGAN CHANDLER	South Orange, N. J.
SYLVESTER CORNELL CLEMANS	Gloversville
RUSSELL CLUTE	Amsterdam
HERBERT THOMAS CROUGH	Canajoharie
ARCHIE IRVING CULLEN	Watervliet
ARCHIBALD JOHN DOUGLAS	Southampton, Mass.
ROBERT ARCHIBALD GOW	Schuylerville
EDWIN MAURICE GRIFFITH	Steuben
CONRAD ROWLAND HOFFMAN	Selkirk
REUBEN BURDETTE HOYT	Deposit
FRANK KEATOR	Accord
FREDERICK JOHN MACDONALD	Watervliet
CHARLES RICHARD MARSH	Oneonta
FRANK CLAY MAXON, JR.	Chatham
MILES AMBROSE McGRANE	Watervliet
JOHN CRAPO MERCHANT, A. B.	Nassau
ADDISON ROBERT MILLER	Rensselaer
WILLIAM LEO MULCAHY	Albany
THOMAS STEPHEN AUGUSTINE O'CONNOR	Lansingburg
MARK M. O'MEARA	Plattsburg
VIRGIL DURAL SELLECK	Glens Falls
MILLARD FRANCIS SHAFER	Cobleskill
EDWIN FORREST SIBLEY	Bennington, Vt.
FRANK TEMPLETON SMITH	Troy
GEORGE HENRY HUMPHREY SMITH	Little Falls
CHESTER ERASTUS HIDLEY TRACY	Troy
JAMES NEWELL VANDER VEER, A. B.	Albany
ISAAC ERNEST VAN HOESEN	Medway

Second Year

JAMES MARMADUKE BODDY, A. M.	Troy
GEORGE LAY BRANCH	East Springfield
CHARLES WILLIAM CHAPIN	Unadilla Center
GUY FORSYTHE CLEGHORN	Green Island
CHESTER THOMPSON COBB	Southampton, Mass.
JOHN ISAAC COTTER	Poughkeepsie

MARCUS ALBERT CURRY	Voorheesville
ARTHUR THOMAS DAVIS	Utica
BRANSEN KEEMPER DeVOE	Accord
MALCOLM DOUGLAS, A. B.	Albany
THOMAS JOSEPH DOWD	Cohoes
SILAS LORENZO FILKINS	Albany
LELAND DELOS FOSBURY, A. B.	Sidney
JOSEPH NICHOLAS BENNETT GARLICK	Albany
WILLIAM ENTWISTLE GARLICK	Fall River, Mass.
HENRY JOHN HARP, JR.	Round Lake
EVERAL C. HAVILAND	Wolcott
HAROLD ELIPHALET HOYT, A. B.	Cambridge
GEORGE JOHN JENNINGS	Ballston
WILLIAM GEORGE KEENS	Albany
ARTHUR CHARLES KLINE	Port Leyden
GEORGE SPENCER LAPE	Mechanicville
KENNETH KENYON LINSON	Kingston
HARRY LOVEJOY LOOP	Cohoes
DENNIS ALPHONSUS MURPHY	Gloversville
ROBERT JOSEPH O'BRIEN, JR., B. S.	Watervliet
DANIEL VINCENT O'LEARY, JR.	Albany
JOSEPH DAY OLIN, A. B.	Watertown
JOHN HENDRY REID	Troy
BURT LUVERNE SHAW, PH. G.	Lansingburg
BENJAMIN J. SINGLETON	Glens Falls
EDWARD AUGUSTINE STAPLETON	Hoosick Falls
ARTHUR WESLEY THOMAS	Middle Granville
RICHARD HENRY VAN DENBURG	Medway
FRANK BARTON WHEELER	Troy
FRANK EDWARD WHITE	Union
GEORGE DAVID WILDE	Cranesville
GUY VAIL WILSON	Masonville
TREVOR CRANDALL YATES	New Lisbon

First Year

EDWARD GEORGE BENSON	Albany
KENNETH DANIEL BLACKFAN	Cambridge
HOMER ANDREW BUSHNELL	North Adams, Mass.
ARCHIE BERT CHAPPELLE	Kingston

KENN ROMEO COFFIN	Cooperstown
MILES JACOB CORNTHWAITE	Lansingburg
JOHN HENRY FAMIAN COUGHLIN.....	Troy
WALTER ALLEN COWELL	Albany
JOHN DIXON CRANE	Hawley, Pa.
CHARLES AUGUSTINE CROISSANT	Albany
ORREL CHARLES CURTISS	South Egremont, Mass.
WILLIAM CHARLES DEVENDORF.....	Currytown
THEODORE DAVID DOCKSTADER	Sharon Centre
PATRICK JOHN DONAHOE	Albany
WILLIAM MULVIHILL DWYER	Amsterdam
JOHN PETER FABER	Stuyvesant Falls
FRED EDWARD FLANAGAN	St. Regis Falls
THOMAS JOSEPH FLYNN	Johnstown
PERLIA ELIJAH GARLOCK	Sprakers
WILLIAM JOSEPH GARVEY	Troy
SCOTT KENYON GRAY.....	Hoosick Falls
CHARLES WILLIAM LEWIS HACKER	Albany
CHARLES ELBERT HAYNES.....	Masonville
WALTER ENNIS HAYS.....	Albany
CHESTER ALAN HEMSTREET	Waterford
THURMAN ALSON HULL	Berlin
FRANK JAMES HURLEY	Bennington, Vt.
LEMUEL RANKINS HURLBUT.....	Troy
MATTHEW JOSEPH KEOUGH.....	Cohoes
OSCAR FRANKLIN LARSON	Middle Granville
JAMES EDWARD MALONEY	West Albany
FRANCES JOSEPH NOONAN.....	Troy
GEORGE WASHINGTON PAPEN	Albany
OMER GERMAIN PAQUET.....	Cohoes
HERBERT BOWEN REECE	Troy
STEPHEN JOHN HENRY REED	Schenectady
WILLIAM GARFIELD ROMMEL.....	Troy
HENRY STANTON ROWE, JR., A. B.....	Cohoes
HARRY RULISON	Albany
FRANK GEORGE SCHAIBLE.....	Albany
JOHN RALPH SCHERMERHORN	Randall
FREDERICK FOSTER SCHIRCK	Saratoga Springs
ARTHUR HAMILTON SCHUYLER	Fonda
FRANCIS JOSEPH SCOTT	Cohoes

CHARLES MORRELL SOULE	Limerick
CHARLES WILLIAM STRATTON	Lee, Mass.
CHARLES CLARK SWEET	Petersburg
WILLIAM AMOND THOMAS	Troy
JAMES HARVEY VAN BUREN	Jefferson
EDWARD HILLIS VINES	Saratoga Springs
ROSCOE CONKLING WATERBURY	Nassau
EDWIN BARNES WILSON, A. B.	Hudson
JAMES WATSON WHITE	Wappingers Falls

CALENDAR, 1902-1903**1902**

Regular winter session begins,	Tuesday, September 30.
Thanksgiving vacation begins,	Wednesday, November 26.
Lectures resumed,	Monday December 1.
Christmas vacation begins,	Tuesday, December 23.

1903

Lectures resumed,	Monday, January 5.
Commencement,	Tuesday, May 5.

PRELIMINARY EXAMINATION.—The preliminary examination of medical students is under the control of the Board of Regents of the University of the State of New York. Those contemplating the study of medicine should apply to the High School Department, University State of New York, Albany, by letter or otherwise, if information concerning this examination further than that given in the catalogue of the Medical College is desired. One of the examinations will be held in Albany, September 23-26, 1902.

MID-WINTER WRITTEN EXAMINATIONS in all the departments are held before the Christmas vacation. A printed schedule of these examinations is furnished the class.

Course of Instruction

The four years' graded course required of all candidates for the degree of doctor of medicine embraces the following subjects:

First Year

1. Anatomy—three lectures; two recitations; seven hours osteology and dissection; four hours anatomical and physiological demonstrations. **2. Inorganic Chemistry**—three lectures; four hours laboratory; one recitation. **3. Physiology**

—two lectures; one recitation. 4. **Histology**—five hours laboratory; one recitation. 5. **Materia medica**—two lectures; two recitations.

Lectures 10; laboratory 9 hours; dissection and demonstrations 11 hours; recitations 7.

Second Year

1. **Anatomy**—four lectures; two hours demonstration; one recitation. 2. **Organic Chemistry and Toxicology**—three lectures; one recitation. 3. **Physiology**—two lectures; one recitation. 4. **Therapeutics**—one lecture; two recitations. 5. **Theory and Practice**—three lectures; one recitation. 6. **Surgery (minor)**—one lecture; one recitation. 7. **Bacteriology and Pathology**—one lecture; seven and a half hours laboratory. 8. **Clinics**—two hours surgical.

Lectures 15; laboratory and demonstrations 9½ hours; recitations 7; clinics 2.

Third Year

1. **Theory and Practice and Hygiene**—three lectures; one recitation. 2. **Clinical microscopy**—two and a half hours laboratory. 3. **Therapeutics**—two lectures; one recitation; 4. **Electro-therapeutics**—one lecture half the term. 5. **Obstetrics**—two lectures. 6. **Pediatrics**—one lecture. 7. **Neurology**—one lecture; one recitation; one clinic. 8. **Surgery (minor, pathology, operative, fractures, dislocations)**—six lectures; two and a half hours demonstrations; one recitation. 9. **Physical diagnosis and Ophthalmology**—section work, two hours. 10. **History of medicine and Railroad surgery**—each one lecture half the term. 11. **Clinics**—two hours medical; three surgical.

Lectures 16; laboratory 2½ hours; demonstrations 2½ hours; recitations 4; section work 2; clinics 6.

Fourth Year

1. **Theory and Practice**—four lectures; one recitation. 2. **Neurology**—one lecture; one clinic. 3. **Gynecology**—one

lecture. 4. **Obstetrics**—one lecture; one recitation. 5. **Surgery (including orthopedics)**—four lectures; one recitation. 6. **Medical jurisprudence**—one lecture, half the term. 7. **Specialties**—one recitation. 8. **Conferences**—one medical; one surgical. 9. **Insanity**—one lecture, half the term. 10. **Otology**—one lecture, half the term. 11. **Special clinics**—three hours. 12. **Clinics**—two hours medical, four surgical. 13. **Section work**—ten hours.

Lectures 12½; recitations 4; conferences 2; clinics 10; section work 10 hours.

The order of instruction for the ensuing session will be found in the catalogue of the Medical College, and may be obtained by application to the Registrar.

Laboratories

Practical Chemistry.—The chemical laboratory is well furnished and conveniently arranged, each student having a desk and reagents for his own use, and being supplied with all necessary apparatus. The laboratory course is preceded, since although some knowledge of chemistry is highly desirable none is now *required* at entrance, by a series of lessons upon chemical nomenclature, notation and the essential principles of theoretical chemistry, including the laws of combination and valence, and these subjects are therefore more briefly treated in the regular lecture course. The practical laboratory work includes tests for those metals and acids, which, in combination, are important as constituents of medicinal compounds or as poisons, together with the separation of the chief groups and the examination of unknown substances. The more important toxicological and urinary tests are performed and all chemical reactions are written upon the blackboard, discussed by the class, and entered upon their notes.

Histology, Pathological Anatomy and Bacteriology.—Work in these departments is carried on in the Bender Hygienic Laboratory, on Lake Avenue, near the Albany Hospital.

This building was erected by Mr. Matthew W. Bender, of Albany, and it is thoroughly equipped with the most modern apparatus necessary for the study of histology, pathological

anatomy and bacteriology. Practical work in these branches is obligatory upon all students, and in this laboratory every facility is furnished for acquiring a thorough knowledge of these important subjects.

In histology each student is taught the technique of the microscope, and is instructed in the preparation, cutting, staining and mounting of specimens and in the structure of the several tissues and organs of the body. Illustrated note-books, with outlines, are furnished, and each student required to fill out full details from the examination of mounted specimens.

In pathological anatomy and bacteriology, the courses are very complete, and a practical course in clinical microscopy is provided during the third year. Students desiring to do so will be allowed and encouraged to pursue original investigations in the laboratory.

The building contains a commodious and well-lighted amphitheatre, in which autopsies are held in the presence of students.

For the alumni of this school, and for physicians in the vicinity, this laboratory offers unexcelled facilities for the examination of urine, sputum and pathological specimens which may be sent to it for examination and report. It is in charge of Dr. George Blumer, Director.

Practical Clinical Courses

In order to familiarize students with the practical work of their profession, and to bring them into closer personal contact with patients, the fourth year class is divided into sections of eight or ten men, and on two days of each week each man devotes the entire time from 11 a. m. to 5 p. m., to the examination and personal observation, under the supervision of the instructors, of patients in the wards and out-patient departments of the various hospitals and dispensaries. In this clinical work especial attention is devoted to the complete examination of the blood, urine, sputum and stomach contents, as well as to the special examination of the eye, ear and other organs. Thus in the course of the school year the men in each section acquire practical knowledge and technical diagnostic dexterity in general medicine, general surgery, dermatology, neurology, otology, laryngology, ophthal-

mology, rhinology, diseases of children and infants, infant feeding, diseases of the rectum and genito-urinary tract, operative surgery, orthopedic surgery, operative obstetrics, electro-therapeutics and medical technique.

Fees and Expenses

Fees, excepting the final examination fee, are payable in advance, are not returnable, and are as follows:

First Year

Matriculation	\$ 5 00
Lecture Course	100 00
Chemical Laboratory	10 00
Histological Laboratory	10 00
Dissection (including material).....	10 00

\$135 00

Second Year

Matriculation	\$ 5 00
Lecture Course	100 00
Bacteriological and Pathological Laboratory.	15 00

\$120 00

Third Year

Matriculation	\$ 5 00
Lecture Course	100 00
Clinical Microscopy Laboratory.....	5 00

\$110 00

Fourth Year

Matriculation	\$ 5 00
Lecture Course	100 00
Final Examination.....	25 00

\$130 00

The payment of three hundred dollars in advance entitles to attendance upon four courses of lectures, exclusive of laboratory and other special fees above stated, and effects a saving of one hundred dollars on the cost of the four year course. Dissection during the second year is advised, but not required

at present. The final examination fee must be paid before the examinations begin. Graduates of the school may attend lectures and stated clinics without charge.

The cost of living in Albany is less than in most other cities of its size. The janitor of the college keeps a list of boarding houses at which good rooms and board can be obtained at from four to five dollars a week or upwards, and by clubbing together students can live comfortably at still lower rates.

Requirements for Graduation

The candidate must be twenty-one years of age, and exhibit a certificate from a physician or surgeon, duly authorized by law to practice his profession, that he has studied medicine and surgery under his instruction, during the period required by law in this state, and he must present evidence of having complied with the law concerning preliminary examination.

He must have attended not less than four regular courses of lectures, of which the last shall have been at this college. Students who have attended one or more courses of lectures at other recognized medical colleges, who may desire to be admitted to advanced standing in this college, will be credited with the work they may have done and with examinations they may have passed, other than those of the senior year, if satisfactory evidence of such attendance and of the passing of such examinations is presented. Students in Union College having the profession of medicine in view are permitted to take the first year studies of the Albany Medical College as a substitute for the studies of the first two terms of the senior year. This enables such students to lessen the time of their academic and professional studies by one year.

He must be of good moral character.

He must maintain a satisfactory standing during his course and pass a satisfactory final examination in the several branches taught.

Regular and punctual attendance is required, and matriculation tickets are endorsed with attendance at the end of the term.

For catalogues or further information, address

WILLIS G. TUCKER, M. D., Registrar,
Albany, N. Y.

January 1, 1902

ALBANY LAW SCHOOL

LAW DEPARTMENT

UNION UNIVERSITY

FIFTY-SECOND YEAR

1902-1903



TRUSTEES

AMASA J. PARKER,
President.

SEYMOUR VAN SANTVOORD,
Vice-President.

CHARLES J. BUCHANAN,
Secretary.

ANDREW V. V. RAYMOND,
MARCUS T. HUN,
J. NEWTON FIERO,
DANFORTH E. AINSWORTH,
D. CADY HERRICK,
LEWIS E. CARR,

ALTON B. PARKER,
CHARLES C. LESTER,
ALONZO P. STRONG,
JAMES LANSING,
JUDSON S. LANDON,
EDWARD P. WHITE.

FACULTY

ANDREW V. V. RAYMOND, D. D., LL. D.,
Chancellor of the University.

J. NEWTON FIERO, LL. D., DEAN,
Procedure, Equity, Torts.

ALBERT C. TENNANT,
Contracts, Real and Personal Property.

JAMES F. TRACEY,
Corporations.

LEWIS R. PARKER,
Bailments, Bills and Notes.

FLETCHER W. BATTERSHALL,
Elementary Law, Domestic Relations.

ALVAH S. NEWCOMB,
The Statutes of New York.

B. LEARNED HAND,
Quasi Contracts.

Special Lecturers

HON. ALTON B. PARKER, LL. D.,
Development of the Law.

HON. IRVING G. VANN, LL. D.,
Insurance.

HON. JUDSON S. LANDON, LL. D.,
Constitutional Law.

HON. D. CADY HERRICK,
Municipal Corporations.

HON. ALDEN CHESTER,
The Federal Judicial System.

HON. SIMON W. ROSENDALE,
The Civil Law.

ANDREW MACFARLANE, M. D.,
Medical Jurisprudence.

HON. WALTER E. WARD,
Patents, Copyrights and Trade Marks.

STEPHEN B. GRISWOLD,
Books and Their Uses.

ALBANY LAW SCHOOL

This School is among the oldest institutions of the kind in the country, having been established in 1851, and its graduates number many of the most successful men in the profession. The School is and has been largely represented in the Executive, Judicial and Legislative departments of this and many other States, as well as of the federal government.

It became a part of Union University in 1873, and begins its fifty-second year as a law school with the coming scholastic year. During its long and successful career it has, in common with other law schools, done much to demonstrate what was at one time doubtful, but is now accepted almost as an axiom, that a course at the law school is a well-nigh necessary prerequisite to a successful professional career. Its instructors have always been men of repute and standing, both for professional learning and personal character.

Local Advantages

The local advantages of the city of Albany, as the seat of a professional school, cannot be overrated. It is the capital of one of the leading States in the Union, whose Legislature is in session here for the third part of every year, affording opportunities for observing the machinery of legislation, and of listening to learned discussions of important governmental and social questions. It is easily accessible, remarkably healthful, and the scene of great business and professional activity. It is large enough to afford its inhabitants all the means of culture and recreation naturally to be looked for in a city, while it is not so large as to make the cost of living burdensome, even to persons of extremely limited means.

Facilities for Study

The facilities afforded the students for reading and study are unsurpassed.

Besides the convenient and well chosen library of the school, accessible to the students at all hours of the day and evening,

the students have the privilege of using the State Law Library, the most extensive and best selected in the United States, consisting of 65,000 volumes.

With free access to these libraries the student may be relieved to a great extent from purchasing text-books.

Academic Year

The academic course, leading to the degree of LL. B., is two years, divided into two semesters, each. Students may enter at the beginning of any semester. The scholastic year for 1902-1903 begins September 23.

Requirements for Admission to the Senior Class

Any student not a college graduate who has completed two years of required legal study, after conforming with the requirements of the Regents as to general education, or any college graduate who has completed one year of such study after graduation, and any student presenting a certificate that he has satisfactorily completed one year of study at a law school of recognized standard, will be admitted to the senior class without examination, upon production of the Regents' and clerk's certificates, and will be graduated in the same manner as students have heretofore been graduated in the one year course, and will receive a certificate for the time spent at the school; but the degree of LL. B. will be conferred only upon students who have completed the entire course of two years at one or more law schools.

Requirements for Admission to the Junior Class

Any student who has conformed to the requirements of the Regents as to general education, or satisfies the Faculty that he will so conform to such requirements within the year allowed by the Regents for that purpose, after commencing the study of law, may enter the Junior class, and upon completion of the two years course and passing the required examination will be graduated with the degree of LL. B.

Methods of Instruction

Instruction is given by lectures involving a free use of simple text-books in connection with leading cases. Instruction is

also afforded by the study and discussion of selected cases, which are memorized. Moot courts are frequently held by a professor assigned for that work.

Examinations

Written examinations will be held at the close of each semester, and no student will be allowed to continue his studies who does not maintain a proper standard both in deportment and work. This rule will be rigidly enforced, so that a certificate of attendance upon the Albany Law School for any given period will be evidence that the time has been honestly and studiously devoted to the study of the law.

Requirements for Graduation

Candidates for graduation in one year course must have attended during a full course of two semesters; must have passed in all examinations, and conformed to all requirements.

Candidates for the degree of LL. B., must have attended two full years, passed in all examinations and conformed to all requirements.

Tuition

The fees for tuition are payable in advance as follows: For the full course of one year tuition, \$100; matriculation fee, \$10; diploma fee, \$2, or \$60 for the first semester and \$52 for the second. For the full course of two years and degree of LL. B., tuition \$100 each year; matriculation fee, \$10; degree, \$5, or \$60 for the first semester and \$50 for each semester thereafter, except the last, which will be \$55.

For members of the bar of this or other states, a deduction from the above rates of \$25 per year will be given.

Special students will be admitted at special rates.

No deviation will be made from the requirement, that tuition shall be paid in advance, unless by special arrangement before the student enters the school, based on satisfactory reasons.

No fees will be returned on account of non-attendance for any cause, but when a whole term is necessarily lost, the student may attend the corresponding term of the next year without additional charge.

Board, Etc.

The price of board in Albany varies, according to the accommodations offered, or required, from \$4 to \$7, including room, fuel and light. *Students intending to enter the school are particularly requested to inform the secretary, W. R. Davidson, Esq., in advance, if possible.* A list of boarding houses is kept by the secretary for the information of students, and upon application to him at the office in the building they will be assisted in securing satisfactory accommodations.

For catalogue or other information, address.

THE ALBANY LAW SCHOOL,

Albany, N. Y.

STUDENTS

Post-Graduates

CLARENCE E. CONANT, <i>Yale</i>	Camden
FREDERICK N. RUTAN, A. M., <i>Princeton</i>	Menands

Senior Class—1901-2

NAMES.	RESIDENCES.
AGNEW, FRANK C.....	Plattsburg
ALLEN, MILLER P., <i>University of Rochester</i>	Penfield
AMADOR, PEDRO G., <i>Universidad de Barcelona, A. B., Instituto de Porto Rico</i>	Camuy, Porto Rico
BARNES, EZRA A.....	Oswego
BENDER, MELVIN T., PH. B., <i>Union</i>	Albany
BLAKE, AZRO L., A. B., <i>Amherst</i>	Nicholville
BONESTEEL, FLOY, J., B. S., <i>Union</i>	Kingston
BOOTHBY, ERNEST L.....	Rensselaer
BRADY, JOHN F.....	Albany
BOSLER, WILLIAM D.....	Cornwall, Conn.
BRYAN, JAMES S.....	Auburn
BUTTS, RALPH T., A. B., A. M., <i>Harvard</i>	Poughkeepsie
CHAMBERS, WILBER W.....	Glens Falls
CLARK, SEDGWICK A., <i>Syracuse University</i>	Syracuse
COLBORN, JOHN H.....	New Baltimore
COLLINS, JOHN F.....	Green Island
CONNOR, B. H., <i>Central University</i>	Cyntheana, Ky.
CONWAY, EDWARD C.....	Albany
COOKE, GEORGE L.....	Monticello
COONS, WALDO M.....	Kingston
CURTIS, ROBERT N.....	Coxsackie
DARRIN, HUGH W., <i>Hamilton College</i>	Addison
DEYO, CHARLES D.....	Kingston
DYCKMAN, EMORY F.....	Jefferson
DYCKMAN, HOWARD H.....	Stamford

FENTON, ANDREW C., A. B., <i>Union</i>	Andes
FENGAR, OLIVER EDWARD.....	New London, Conn.
FLINN, RAYMOND, <i>University of Chicago</i>	Albany
GARVER, ROBERT D., <i>Kansas State University</i>	Topeka, Kan.
GLADSTONE, FRANK	Andes
GETMAN, CRAWFORD O.....	Fort Plain
GILLET, RANSOM H., PH. B., <i>Yale</i>	Troy
HAIGHT, BENJAMIN D.....	New Berlin
HANMER, ANDREW J.....	Long Lake
HARRIS, GORDEN G.....	Alton
HAWKINS, RALPH J.....	Islip
HESS, HENRY H.....	Cobleskill
HICKOK, FRANK M.....	Albany
HINMAN, C. FORD.....	Schoharie
HOLOHAN, FRANK E. G.....	Watervliet
HOLCOMBE, GEORGE A., B. S., <i>Union</i>	Hartford, Conn.
HUBBARD, LESTER T., A. B., <i>Union</i>	Cohoes
HUTCHINS, BENJAMIN B., C. E., <i>Pa. Military College</i> , Mechanicville	
IVES, RALPH S.....	Margaretville
JONES, ROBERT B.....	Whitesboro
JUDGE, JOHN E.....	Plattsburg
KATHAM, RUTHERFORD W.....	Conklinville
KEOUGH, THOMAS H., <i>Hamilton</i>	Albany
KNAPP, JAMES T.....	Syracuse
LITTLE, DAVID F.....	Cohoes
LOEBLE, WILLIAM E.....	Troy
LOUCKS, WILLIAM D., <i>Union</i>	Albany
MARTIN, BRUCE N.....	Watertown
MCCARTER, JR., GEORGE B.....	Salem
MCDERMOTT, THOMAS F. J.....	Rensselaer
McLINDON, JOHN W., <i>Cornell</i>	Schuylerville
McMULLAN, JOHN J.....	Schenectady
MOORE, GEORGE J.....	Fort Covington
NOLAN, JAMES J.....	Albany
PAIGE, DOUGLAS W., A. B., <i>Union</i>	Schenectady
PELLETREAU, PAUL M.....	Balston, Spa.
POST, HOMER L., A. B., <i>Colgate University</i>	Auburn
PIKE, GEORGE E., PH. B., <i>Union</i>	Sanborn
ROTHERY, JOHN ALLAN, M. A., <i>Glasgow University</i> , Thornton, R. I.	

READ, STEPHEN S., PH. B., <i>Union</i>	Bath, Steuben Co.
ROGERS, ERSKINE CLARK, PH. B.,	Sandy Hill
MORRIS H. SHEDD.....	Lowville
SHELDON, GEORGE C.....	Troy
SMITH, GEORGE H.....	Cohoes
SMITH, NATHAN M.....	Watertown
SNEED, CHARLES W. U.....	Newburgh
THOMPSON, JAMES P.....	Alton
VAN VALKENBURGH, CECIL C.....	Catskill
WADE, DUDLEY B.....	Albany
WOOLSEY, DAVID WILLIAM.....	Milton

Junior Class—1902-3

ADAMS, HARRY G.....	Balston Spa.
AIKEY, GEORGE L.....	Springfield, Mass.
AUSTIN H. LEROY.....	Catskill
BARRETT, H. A., A. B., <i>Union</i>	Canajoharie
BOORN, LELAND L., PH. B., <i>Union</i>	Sherman
BRANCH, CHARLES E.....	Port Jervis
BRENNAN, CHARLES E.....	Albany
BRITTON, NORMAN N.	Rochester
BRYAN, ALBERT E.....	Buffalo
CASELLAS, J. RAMOS.....	Froy, Porto Rico
COHEN, J. GORDON.....	Rensselaer
COOK, JR., W. BURT, A. B., <i>Cornell</i>	Waterford
CRARY, LEON G., <i>Cornell</i>	Canton
DENISON, ALFRED D.....	Johnstown
DRUMMAND, RICHARD C. S., A. B., <i>Hamilton</i>	Auburn
DUNN, CHARLES A., A. B., <i>Cornell</i>	Whitesboro
DYER, DAVID A.....	Albany
FOSTER, JAMES K.....	Goshen
FULLER, EDWARD M., M. A., <i>St. John's</i>	Chicago, Ill.
GUARDINEER, FREDERICK R.....	Albany
HAIGHT, SAMUEL M.....	Mabetttsville
HOTAILING, CLARENCE G.....	Clarksville
JOHNSON, EDWARD F., A. B., <i>Rutgers</i>	Albany
LAWLESS, JOHN J.....	New London, Conn.
LELAND, HUGH H., M. A., <i>St. John's</i>	Ottawa, Ill.
MARVIN, DWIGHT W., A. B., <i>Williams</i>	Troy

McCANN, CHARLES L.....	Poughkeepsie
MERRIMAN, PORTER LEE, PH. B., <i>Union</i>	Albany
MINKIN, LEOPOLD, B. S., <i>Union</i>	Albany
MILLS, BORDEN H.....	Albany
MORRISON, LINCOLN W.....	Thompsonville, Conn.
NIMMO, RAY L.....	Troy
O'BRIEN, JOHN F.....	Albany
ODELL, GEORGE B.....	Downsville
PALMER, GREGORY, A. B., <i>Williams</i>	Albany
PARR, GEORGE H., <i>Yale</i>	Glenmont
ROGERS, WILLIAM B. F.....	Kingston
ROONEY, WILLIAM, A. B., <i>Williams</i>	Cohoes
SAYLES, GENERAL W.....	Rome
SMITH, PETER G.....	Webster
TAYLOR, HARCORT M.....	Sidney
TIERNAN, GEORGE.....	Albany
THOMAS, HARRY J.....	New Berlin
WHIPPLE, BURDETT.....	Salamanca
WRIGHT, JAMES K.....	Baldwinsville

DUDLEY OBSERVATORY

TRUSTEES

President

Vice-President

SAMUEL B. WARD

Treasurer

DUDLEY OLCOTT

Secretary

LEWIS BOSS

ERASTUS D. PALMER

JOHN M. CRAPO

CLARENCE RATHBONE

RUFUS W. PECKHAM

GRANGE SARD

DEAN SAGE

CHARLES L. PRUYN

J. TOWNSEND LANSING

ANDREW V. V. RAYMOND

HENRY HUN

WILLIAM L. LEARNED

GEORGE G. DAVIDSON

Staff

Director

LEWIS BOSS, A. M.

First Assistant

ARTHUR J. ROY, C. E.

Second Assistant

WILLIAM B. VARNUM, A. B.

THE DUDLEY OBSERVATORY

The Dudley Observatory is located on Lake Avenue, in the southwestern part of Albany, to which site it was removed in 1893 from its former location in the northern part of Albany. It is devoted to original researches in astronomy, according to the purpose of its founders and successive patrons. Its contributions to science are represented in two volumes of "Annals," and in other published volumes and memoirs contained in the transactions of learned societies and astronomical journals. Its principal line of work at the present time is the determination of problems relating to the positions and motions of the stars and of the solar system as a whole. The staff consists of the director, two assistants, and several computers.

The instrumental equipment of the Observatory is designed for the purposes of exact measurement in line with its chosen work. In the tower of the main building is the Pruyn Equatorial, with object-glass twelve inches in diameter. This instrument is equipped both for visual and photographic use, and is of a high order of mechanical perfection. The Olcott Meridian Circle is located in a separate building, especially designed for securing the utmost equality in the temperature between the external air and that in the building itself. Its object-glass is eight inches in diameter. It was made by Pistor and Martins, of Berlin, and is regarded by astronomers as a masterpiece of accurate workmanship. This instrument has been employed for many years in obtaining the measurements necessary for the construction of the numerous and elaborate star catalogues which have issued from the Dudley Observatory.

In addition to these instruments the observatory is in possession of various small telescopes, clocks, chronographs and smaller apparatus.

The institution is supported by an endowment, chiefly contributed by Mrs. Blandina Dudley and the late Catherine W. Bruce; as well as by appropriations which have been received from the National Academy of Sciences, and from current contributions of trustees and friends of the institution.

The Dudley Observatory is not designed to give general instruction in Astronomy, though special students contemplating instruction in professional lines have been received from time to time under an arrangement of computing service to the observatory.

The observatory is opened to visitors on Tuesday evenings of each week from 8 to 10 o'clock.

For further particulars apply to

LEWIS BOSS,
Director.

ALBANY COLLEGE OF PHARMACY

DEPARTMENT OF PHARMACY OF

UNION UNIVERSITY

ALBANY COLLEGE OF PHARMACY

The Albany College of Pharmacy was created by act of the Board of Governors of Union University, June 11, 1881, and constitutes the *Department of Pharmacy of Union University*. It was incorporated as the "Albany College of Pharmacy," August 27, 1881.

The exercises of the college are held in the Albany Medical College building, on Eagle street, distant but a block from the Capitol, and in the pharmaceutical laboratory on Maiden Lane. The lecture rooms and laboratories are perfectly adapted to the needs of the college and furnish to the faculty the very best facilities for imparting instruction. The lectures are delivered in the chemical lecture room on the first floor, adjoining which is the large and well fitted chemical laboratory, where instruction is given to the classes in practical chemistry. The collections in the different departments have been greatly increased and afford the professors ample facilities for the illustration of the lectures.

BOARD OF TRUSTEES

WILLIAM J. WALKER,
President.

CHARLES NEWMAN,
Vice-President.

CHARLES H. GAUS,
Treasurer.

THEODORE J. BRADLEY, PH. G.,
Secretary.

ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,

WILLIS G. TUCKER, M. D., PH. D.,

JOHN M. BIGELOW, M. D.,

DOUW H. FONDA,

ARTHUR L. ANDREWS,

OTTO SCHOLZ.

FACULTY

ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,
Chancellor of the University

WILLIS GAYLORD TUCKER, M. D., PH. D.,
Professor of Chemistry.

ALFRED BIRCH HUESTED, M. D., PH. G.,
Professor of Botany and Materia Medica.

GUSTAVUS MICHAELS, PH. G.,
Professor of Pharmacy.

DE BAUN VAN AKEN, PH. G.,
Lecturer on Pharmacy.

THEODORE JAMES BRADLEY, PH. G., *Secretary*.
Instructor in Chemistry.

FRANK RICHARDSON, PH. G.,
Instructor in Materia Medica and Director of Pharmaceutical
Laboratory.

THOMAS WILLIAMS JENKINS, M. D.,
Instructor in Microscopy.

GARRET VANDER VEER, DILLENBACK, PH. G.,
Instructor in Pharmacy

Board of Examiners

LOUIS SAUTTER, PH. G. CHARLES H. GAUS, ESQ.
EDWIN F. HUNTING, PH. G.

STUDENTS, 1901-02

Senior Class

SAMUEL ARMSTRONG	Pine Bush
FRANK CLAYTON BARROWS	Albany
LAURENCE HENRY BURKE	Oneonta
ARTHUR JAMES DORAN	Troy
WILLIAM JOHN FRIDAY	Schenectady
EDWARD AUGUSTIN GILLANS	Amsterdam
FRED HARMON	Adams, Mass.
WALTER WILLIAM JANSER.....	Albany
GEORGE GORMAN LENNEY	Potsdam
JOHN ALEXANDER LIVINGSTON	Hoosick Falls
ANDREW WILLIAM McLAUGHLIN	Albany
JOHN EDWARD McNANY	Port Henry
JOHN KIDDER OAKES.....	Cherry Valley
GEORGE AVERY PARTRIDGE	Troy
ELMER WILLIAM PEPPER	Schenectady
JOHN DAVID SAUTER	Schenectady
CHARLES EDWIN STICKLES.....	Albany
JOSEPH ROMEO STONE	Keesville
JAMES WILLIAM WALLACE	Schenectady
ARTHUR BROWN YOUNG	Johnstown

Junior Class

RUSSELL REUBEN AKINS	Catskill
NEIL WILLIAM AVERY	Cairo
HAROLD SANFORD BARNES	Canton
ALBERT GEORGE BLICHFELDT	Saratoga Springs
MARY LOIS BRAYTON	Hartford
CHESTER JOHN BROWN	Malone
FREDERIC DEAN BROWN	Oneonta
CLARENCE BLEECKER CLARK.....	Albany
DAVID EDWARD CONNERY	Greenwich
CALVIN DATES GROESBECK.....	Hoosick Falls
WESLEY JOHN HAIG	Madrid

HOWARD HUXLEY HAWKINS	Brushton
HERBERT FRANKLIN HOGEBOOM	Nassau
WILLIAM THOMAS KEESHAN	Troy
WALTER GREENE LADD	Hoosick Falls
CHESLEY ARTHUR LASHER	Catskill
GEORGE LODERHOSE	Monticello
WILLIAM OSCAR MARTIN	Willsboro
JOHN KINNEY McDONALD	Schenectady
JOHN THOMAS McLAUGHLIN	Boonville
WINIFRED MAY MILLER	Boonville
WILLIAM EVERETT MOATS	Johnstown
WALTER JAMES MORE	Hancock
EVERETT KRAMRATH PANGBURN	Albany
FRANK FRED PETERS	Schenectady
JOSEPH ANDRE PHENIX	Lewiston, Me.
DAN WARD RICH	Eaton
JEREMIAH WILLIAM ROBERTS	Albany
FRED NICHOLAS SCHUTT	Gloversville
GEORGE AARON SCOTT	Sheffield, Mass.
HARRY FREDERICK SMITH	Troy
EDWARD WILLIAM SPILLANE	Cohoes
FRANK STARK THYNE	Johnstown
JAMES ROGERS WRIGHT	Glens Falls

Course of Study

The annual course of instruction in this college consists of six or more lectures each week during a period of twenty-five weeks, together with practical laboratory work, recitations, etc. The next course opens with an introductory lecture on Monday evening, October 6, 1902, and lectures will be delivered every week day evening thereafter, except upon Saturdays, when the hour is at 2 o'clock p. m. No lectures or college exercises will be given upon Thanksgiving or election days or the mid-winter holidays. The course is graded and extends over two years; students being divided into junior and senior classes, consisting of first and second year students, respectively. The lectures to the senior class are given upon Monday, Wednesday and Friday evenings, and to the junior class upon Tuesday and Thursday evenings and Saturday afternoons, but students are entitled to attend all lectures without extra expense.

Entrance Requirements

All applicants for admission to regular standing in this college will be required to pass a preliminary examination or present a grammar school certificate entitling the holder to enter a high school, or satisfactory written evidence of an equivalent preliminary education. The examination of those who cannot present such evidence will be held at the opening of the session. A knowledge of Arithmetic, Geography and Grammar, as far as is taught in the grammar schools of this state, and entitling the possessor to enter a high school of the state, will be required.

The Curriculum

of the college embraces—

Chemistry—Theoretical, General, Pharmaceutical and Analytical.

Botany—Structural, Systematic and Analytical.

Materia Medica and Pharmacognosy.

Pharmacy—Theoretical and practical.

Microscopy—Theoretical and practical in its relations to Pharmacy.

Schedule of Exercises**Seniors**

- Monday, 2 to 4 p. m. Microscopy.
7 to 8 p. m. Pharmacy Recitation.
8 p. m. Materia Medica Lecture.
- Wednesday, 1 to 4:30 p. m. Pharmaceutical Laboratory.
4:30 to 5:30 p. m. Chemistry Recitation.
8 p. m. Pharmacy Lecture.
- Friday, 1 to 2 p. m. Pharmacognosy and Materia
Medica Recitation.
2 to 4:30 p. m. Pharmaceutical Laboratory.
8 p. m. Chemistry Lecture.

Juniors

- Tuesday, 1 to 4:30 p. m. Pharmaceutical Laboratory.
5 to 6 p. m. Chemical Laboratory.
7:30 p. m. Pharmacy Recitation.
8:30 p. m. Pharmacy Lecture.
- Thursday, 1 to 4:30 p. m. Pharmaceutical Laboratory.
5 to 6 p. m. Chemical Laboratory.
8 p. m. Botany and Materia Medica Lecture.
- Saturday, 1 to 2 p. m. Chemistry Recitation.
2 to 3 p. m. Chemistry Lecture.
3 to 5 p. m. Chemical Laboratory.

Requirements for Graduation

The diploma of this college confers the degree of GRADUATE IN PHARMACY, (Ph. G.) Applicants for this degree must be at least twenty-one years of age, of good moral character, have attended two full courses of lectures (which shall have included all laboratory practice) in this college, or the last course in this college and the first in some other college of pharmacy; have had inclusive of the time of attendance at this college, four years' practical experience with some reputable and competent pharmacist; have passed a satisfactory examination and paid all fees as hereafter stated. Experience in wholesale stores cannot be taken in lieu of the practical experience in a retail pharmacy.

Fees for Tuition**First Year**

Matriculation	\$ 3 00
Lecture tickets	30 00
Chemical laboratory	15 00
Pharmaceutical laboratory	15 00
Recitations	5 00

Second Year

Lecture tickets	\$30 00
Pharmaceutical laboratory	15 00
Microscopical laboratory	10 00
Recitations	5 00
Graduating fee	10 00

Students who have attended two full courses of lectures at this college may attend further courses without extra charge. Payment of Laboratory and Quiz Fees will, however, be required should the courses be taken.

Albany as an Educational Center

Albany affords many and unusual advantages to the student of pharmacy in the prosecution of his studies. He may attend, without extra charge, any of the lectures in other departments of the University, while the State Library, State Museum of Natural History and like collections are freely open to him, and meetings of scientific societies frequently held which he has the privilege of attending.

Situations

Students desirous of obtaining employment will be assisted so far as possible in securing situations, but employment cannot be promised in advance, and places cannot be secured by correspondence. Desirable situations have been obtained for many applicants, and graduates of the college are in constant demand. During the past year the faculty have had a much larger number of applicants for graduates to fill lucrative positions than they have been able to supply. The demand on the part of the employers for skilled assistants is steadily increasing, and a college diploma or license from an examining board is demanded by law of those who engage in the practice of pharmacy in most of the states and cities of the Union.

Cost of Living

The cost of living is less in Albany than in most other cities of its size. Good rooms and board can be obtained at from \$3.50 to \$6.00 per week, and by clubbing together and boarding themselves, students can live comfortably and pleasantly at still lower rates.

For further information address

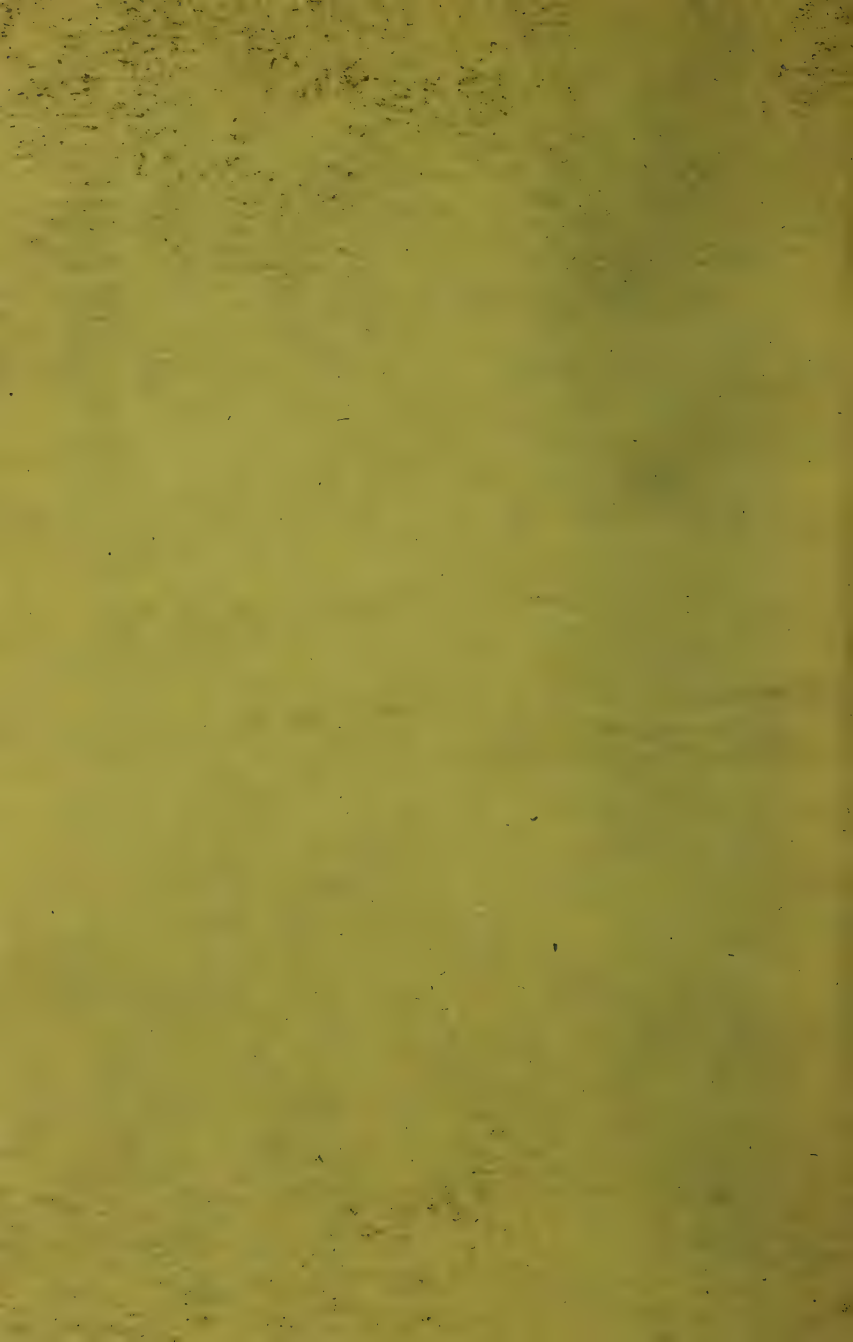
THEODORE J. BRADLEY, Ph. G., Secretary.

4 Lancaster Street, Albany, N. Y.

INDEX

	PAGE		PAGE
Union University		Honors, Special	101
Calendar	5	Latin	48
Constitution	7	Lectures, General	64
Faculty	10	Library	65
Officers	8	Mathematics	57
		Mechanics	58
Union College		Modern Languages	49
Absences	89	Museums	66
Admission	39	Officers	27
Biology	61	Order of Studies	69
Calendar	5	Philosophy	56
Chapel	90	Physics	58
Chemistry	59	Physiology	63
Commencement Awards in		Physical Education	63
1901	104	Political Economy	53
Committees—of Faculty	27	Prizes	97
of Trustees	23	Rhetoric	52
Conditions	90	Rooms	92
Courses of Study	37	Scholarships	94
Departments of Instruction ..	47	Sociology	53
Degrees and Honors	100	Standing	89
Degrees conferred in 1901 ..	102	Students	28
English	50	Trustees	22
Expenses	92	Tuition	92
Entrance Examinations	46		
Faculty	24	School of Civil Engineering	
General Regulations	89	Admission	113
Geology	61	Courses of Study	114
Greek	47	Degrees	111
History	53	Electrical	120
		Expenses	92

	PAGE		PAGE
Faculty	109	Expenses	160
General	116	Faculty	156
Instruments and Apparatus .	121	Graduation	160
Order of Studies	126	Students	162
Sanitary	130	Trustees ...	155
Terms and Vacations	5		
Albany Medical College		Albany College of Pharmacy	
Calendar	146	Admission	180
Course of Instruction	146	Calendar	5
Examinations	146	Course of Instruction	180
Faculty ...	137	Degree	181
Fees and Expenses	150	Faculty	177
Requirements for Graduation	151	Fees and Expenses	182
Students	141	Requirements for Graduation	181
Trustees	136	Students	178
		Trustees	176
Albany Law School		Dudley Observatory	
Admission	159	Admission	176
Calendar	5	Equipment and Work	170







UNIVERSITY OF ILLINOIS-URBANA



3 0112 114112755